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In-Service Education
OF
Elementary Teachers

INSTITUTE OF EDUCATION FOR WOMEN
Dept. of Extension
SERVICE
CALCUTTA-27

MULKH RAJ CHILANA

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IN-SERVICE EDUCATION OF ELEMENTARY TEACHERS

A study of the organization of In-service Education of Elementary School Teachers in the Philippines and its implications for India.

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M. A., M. Ed.,
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FOREWORD

The need for continuing education has been duly recognised in all the countries. This Association also lays a great stress on this aspect of education. It has already launched a comprehensive programme of in-service education for teacher-educators. The study of Comparative Education is an important aspect of in-service education, since it throws a flood of light on what other countries are doing for improving their educational system.

The present publication is a careful study of "The In-Service Education Programme for Elementary School Teachers in the Phillipines". It has been made by **Shri Mulkh Raj Chilana,** who spent some time recently as a UNESCO Scholar at the Asian Institute for Teacher-Educators, Quezon City, Phillipines. The study is very comprehensive in nature and includes all the important features of in-service education programmes for primary teachers in the Phillipines. The working procedures of these programmes at different levels have been studied very carefully, A number of techniques including documentary analysis, questionaire, interview, attendance at conferences, etc have been applied to understand these procedures.

In the light of his study, Shri Chilana, has drawn certain conclusions and has offered suggestions for improving the in-service education programmes of elementary school teachers of this country. His suggestions may prove useful in implementing the Education Commission's recommendation that there should be a large scale, systematic and co-ordinated programme of in-service education so as to involve the maximum number of teachers.

DEDICATION

To

THE EDUCATIONAL EXTENSION WORKER,

Who labours patiently and unselfishly :—

- To increase the sensitivity of teachers to their problems so that thinking may be pooled to overcome them ;
- To encourage new techniques and methods of teaching in the class room so that the youth may be better educated ;
- To improve the attitudes of teachers so that the profession may be more honoured ;
- To extend the general and professional knowledge of teachers so that they may be more effective ; and
- To bring about change in the teachers to improve the quality of future generation.

PREFACE

This is the report of an investigation into the organization of in-service training programmes for teachers in the Philippines, carried out under the supervision of **Dr. E. A. Pires,** senior Unesco Expert and submitted to the Asian Institute for Teacher-Educators, Quezon City, University of the Philippines, in partial fulfilment of the requirements for Post-Graduate Diploma in Teacher Education, for the year 1966-67. Some implications have also been drawn from the findings of the study for organizing in-service education programmes for teachers in India. For his being able to present the report in the present form, the author is deeply indebted to Dr. Pires, who provided perennial guidance and constant encouragement to complete the work of this magnitude in a short duration.

It is hoped that both strong points and inadequacies and weaknessess in the working procedures and organizational set-up of in-service training in the Philippines, as revealed in the study, will render some useful indications to the educational extension workers in India to improve their own methods of working. It is also expected that suggestions given at the end of the report with regard to the development of this programme in India, will serve to provoke thinking among educators to seek new dimensions of its organization and to involve variou-other concerned agencies to pool their resources for the vital cause of improvement of teacher preparation.

It is with a great pleasure and as a token of love for the organization that the author places this book at the disposal of the **Indian Association for Teacher-Educators,** which is emerging as a major organization to promote the cause of teacher-education in the country. Sincere thanks are offered to the Association for getting it published. Special thanks are, of course, due to **Dr. S. N. Mukerjee** President of the Association for writing a foreward to this publication.

—*Mulkh Raj Chilana*

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CHAPTER I

INTRODUCTION

1. The need for In-Service Education of Teachers

Well organized and systematic in-service education is essential for the efficiency and the promotion of any profession, but it is much more important for educational workers because of the unique and strategic position which education occupies in the task of human and national development. The report of the Education Commission 1964-66 in India gives recognition to the important need in the following words:

> "In all the professions, there is need to provide further training and special courses of study, on a continuing basis, after initial professional preparation. The need is most urgent in the teaching profession because of the rapid advance in all fields of knowledge and continuing evolution of pedagogical theory and practice."[1]

The strength of any nation depends upon the quality and amount of education of its people. So goes the wise saying that it is not gold, but men which make a nation strong. According to the Commission on Teacher Education, "upon schools largely depends the nurturing of the nation's human resources. Hence these institutions should be very effective. The most vitally significant elements in the educational situation are the teachers of children. It is they who develop and man the curriculum. It is they who influence by their conduct and example, the thought and behaviour of every child—the future man. The quality of teacher, therefore is a matter of the deepest social concern."[2]

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[1] *Report of the Education Commission*, 1964-66, Government of India, Ministry of Education, "Education and National Development", P. 84

[2] *The Improvement of Teacher Education*, Commission on Teacher Education (Washington, D.C.: American Council on Education, 1946), PP.246-47.

This indicates that the training of teachers is a very important task because on the quality of teachers we have to-day will depend the quality of our next generation.

To equip the teacher to discharge his duties efficiently, he is to be provided with a well-rounded training programme. The place of pre-service education can hardly be underestimated, but howsoever superior the pre-service education given to teachers, may be, the need of in service education will always remain. Pre-service education serves to provide an insight into the profession, including the general psychological, sociological and philosophical principles concerning education, whereas in service education will enable the teacher to reinforce his faith in these principles, after applying them in practice. Pre-service education helps the teacher to begin to teach and in service education provides opportunities to grow up in the profession.

> "Pre-service education seeks to produce a person ready to launch on a teaching career. It deals mainly with fundamentals and basic professional skills. It is, however, only the start of a long journey. The education of teachers does not end with graduation from teacher training institutions. Education is a continuous process. It is essential, therefore to find ways and means to provide facilities and an environment in which the teacher will find new significance and new understanding and wherein he will develop new insight into his work and programme. The creation of such an environment conducive to professional growth is in-service education at its best."[3]

Pre--service education, as indicated above, however rich in quality and enough in quantity it may be, can never be a substitute for continuous in-service education programme.

The in-service education of teachers requires to be given greater attention especially in this age, which is characterized by explosion of knowledge and rapid change, which naturally have their implications on the school curriculum. The acceptance of democratic principles has not only brought about an increase in pupil enrollment, but it has resulted in heterogenous groups of students in the classroom and has put forth the ideas of democratic leadership and group dynamics.

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[3] *Elementary Teacher Education,* Report of the Committee to Evolve Model Syllabi for Elementary Education, 1963–65 (Delhi: N.C.E.R.T.. 1965), P. 139

> "This is an age of change. It requires new and rapid adjustments. Its impact is an on-going challenge. It is the basic reason determining the need for continuous education of all people and particularly of all teachers. Without continuing study, teacher knowledge and teacher performance soon become obsolete."[4]

Referring to the important changes in India alone, the change of government from colonial rule to democracy, the abolition of the caste system, secularism, the place of the national languages and the official language, the universalization of education, the Hindu Code Bill, the problem of national integration and interest in international affairs, pose a good deal of challenge to the educational system to meet the needs. The ambition of the country to advance technologically has already increased the emphasis on science teaching. The tendency in the population to more mobility at least to the different states in India is increasing and inter-state marriages are coming up. Researches in the different educational areas have revealed the behaviour patterns and growth patterns of the Indian children and they require corresponding changes in the methods of teaching in the schools.

In fact, any change in society has to affect the school and the school must reflect its aspirations and needs to be truly representative of it. Teachers should not only effect necessary changes in the different subject areas, but change the total curriculum if necessary. Without being sensitive to the happenings around, the teacher cannot deliver the goods. All this can be achieved only if the teachers get sufficient opportunities to grow through the in-service education programme.

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[4] John Cliffton Moffit, *In-service Education of Teachers* (Washington D C. The Centre for Applied Research in Education. Inc., 1963). P. 9.

In-service education, thus, comes as a logical sequence to the continuous teacher preparation programme. Rather it is much more necessary in the present age to keep pace with the fast developing society. Teachers will not be able to help students grow unless they are themselves growing. In the words of Moffit "Injustices to children and youth will be inevitable unelss education for teachers increases in quality and quantity, both before and after teaching commences"[5]. The society has to ensure the continuous growth of the teachers to keep itself dynamic rather than static. A teacher's knowledge is bound to rust unless he keeps himself in touch with the recent progress in education. How can he create a thirst for knowledge amongst his pupils, unless he himself shows a craving to know more ? Here is a message which Tagore has left for teachers:

"A teacher can never truely teach unless he is still learning himself. A lamp can never light another lamp unless it continues to burn its own flame.."[6]

2. Significance of In-Service Education for Elementary School Teachers.

Need to improve the quality of education is necessary at every level, but it is much more necessary at the elementary level because of the significant role it plays in national development. Elementary education lays the foundation of secondary and university education and the structure will be as strong as the foundation. The educational pyramid, therefore, should make provisions for a strong base in elementary education. Elementary education assumes greater importance in democratic countries, where every individual has to play a significant role in the formation of government, especially when the country cannot afford to provide compulsory education beyond this stage. The objective of elementary education therefore, will be to improve the future citizenry and produce desirable kind of voters, who can be enlightened partners in the government. To achieve this, teachers at the elementary level need a sound pre-service and in-service education.

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[5] *Ibid.*, P. 3.

[6] *Elementary Teacher Eduction*, Report of Committee 1963-65, *op. cit.*, p. 149.

The need for in-service education for elementary teachers in the Asian countries is heightened because of the following reasons :

1. Education has been a neglected subject and plans for expansion are being implemented. There is a danger of the dilution of quality while concentrating on quantity, if proper attention is not given to the in-service growth of teachers.
2. Most of the Asian countries believe in democratic principles and in the worth of the individual to participate in the government procedures. Primary education and its quality will play an important role for this by providing a strong base for development of the individual.
3. Most of the countries cannot afford to provide compulsory education beyond the elementary school levels and so education at this level should prepare the individual well to play his role intelligently.
4. Under the expansion scheme in many countries, untrained teachers were recruited to man the elementary schools. Their proper training is obligatory.
5. Pre-service education programme in many of the countries have been inadequate qualitatively.
6. The academic and professional qualifications of elementary school teachers in many countries are very low.
7. Some emergency measures were taken to give training to untrained teachers. These need to be followed up in the in-service education programmes.
8. A vast majority of elementary schools in this region are located in the rural areas, where teachers are cut

off from the modern media of learning and only rarely get the opportunity to meet their supervisors.

The provision of an in-service education programme for elementary teachers in most of the Asian countries is very meagre, if not negligible. According to Pires, "The development of programmes of in-service training and research in primary teacher training institutions demands very serious attention from educational administrators in the countries of Asia. To-day the vast majority of primary teacher training institutions in this region are concerned only with pre-service training, although a good proportion of teachers who come for these pre-service courses are teachers in service. They are hardly engaged in any in-service training."[7]

Keeping in view the picture of the present in-service education programmes in Asia and the urgent needs of the elementary teachers, as discussed above, the problem needs to be tackled at the earliest.

3. Development of the In-Service Education Programme in the Philippines

The Philippines is one of the very few countries in Asia making provision for the in-service education of elementary school teachers not only in a well organized way, but for a larger number of teachers covering almost all the public schools. A view of the development of these programmes, therefore, may be helpful in the present context. In fact it goes to the credit of the in service education programmes that they have influenced the organization of the present pre service programmes in the country. In the words of Aldana, "Two agencies have been responsible for the training of teachers in the public schools: the vacation classes and the normal schools. It can well be said that vacation school work for teacher training in the Philippines furnished the ideas that later developed and found expression in the normal school curriculum that has been formulated from time to time."[8]

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[7] E. A. Pires, Primary Teacher Training in Asia (UNESCO, Bangkok, 1963), p. 204.

The history of the formal in-service education programme in the Philippines may, however, be traced back to the year 1901, when a one month vacation institute for the training of over 600 teachers was held in Manila at the opening of the Insular Normal School as provided in Act No. 74 of the Philippine Commission. The Baguio Assembly, held in 1908 offered courses for selected teachers. A number of such courses were subsequently held.[9]

Considering the limitations of such courses and in order to cover larger number of teachers and to include those who could not leave their jobs for the training period, the Bureau of Education started organizing correspondence study courses in 1907.[10] But the practice was discontinued in 1913 in pursuance of the recommendation of the Divisional Superintendents' Convention.[11] In 1917 the University of the Philippines started offering courses to teachers, followed by many private colleges and universities. The courses were generally offered during the vacation.

In the year 1926, vacation normal schools were started. This idea was preceded by a number of vacation classes held at different places between the years 1917 and 1924. In 1927 the University of the Philippines and the National University agreed to grant credits, under certain conditions by special arrangements for some professional courses.

It was an important step towards decentralization when the Divisional Superintendents were asked in 1927 to draw and implement plans for the educational advancement of the teachers in their respective areas.[12] The teachers were encouraged to read professional literature and organize group activities, based on the principle of self help in the teachers' clubs.

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[8] Banigno Aldana The Education System of the Philippines (Manila : University Publishing Co., Inc., 1949), P. 177.

[9] *Ibid.*, p. 168.

[10] Bureau of Education Circular No. 56, s. 1907

[11] Bureau of Education Circular No. 56, s. 1913

In 1950, the Bureau of Public Schools started holding summer workshops in the teachers' camp at Baguio, adding new dimension to the in-service education programmes in the country. Besides this three in-service centres on the national level were established in Bayambang, Cebu city and Zamboanga City, one each in the three regions of the country.

The year 1963 marks a land mark in the development of in-service education programmes in the Philippines. The Bureau of Public Schools established ten regional in-service centres in this year for developing the programme. In 1964, ten more centres were established. The service areas of the centres were so divided as to cover the whole of the country. The objectives of the programmes were also revised.

It seems necessary to mention here that the establishment of the Asian Institute for Teacher Educators in Quezon City in 1962 has also been playing a significant role in providing in service education to teachers. The philippines, being the host country has been sending 7 to 8 participants each year. Besides directly imparting in-service education, the institute has indirectly, through its trainees, effected the in service education programme in the country in elementary schools.

The programmes of in-service education in the Philippines are, at present, being organized at four levels, viz.:

1. Central Level—The responsibility rests with the Bureau of Public Schools.
2. Regional Level—The whole country is divided into 20 service areas, one for each of the 20 centres.
3. Divisional Level—The responsibility is with each Divisional Education office.
4. Local Level—The responsibility is with the District Supervisor and the local principals and teachers.

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[12] Bureau of Education, Manual of 1927.

CHAPTER II

STATEMENT OF THE PROBLEM

1. The problem and its scope.

The problem is "A Study of the Organization of In service Education Programme for Elementary School Teachers in the Philippines and its Implications for India."

The study attempts to find out some of the organisational patterns and the working procedures at the different levels of in-service education programme in the Philippines. Specifically, the study aims at finding out answers to the following questions :

1. What are the aims and objectives of the in-service education programmes in the Philippines ?
2. What are specific responsibilities at different levels, viz., national, regional, divisional and local in developing the in-service education programme in the country ?
3. What is the curriculum for in-service education programmes ?
4. What are facilities available for organizing in service education programmes at different levels ?
5. What is the nature of staff responsible for organizing in-service education programmes ?
6. What considerations generally guide administrators in selecting place and time for organizing in service activities ?
7. What methods are generally used during the in-service education courses ?
8. How are the participants selected for in-service education activities ?

9. What is the service area at different levels ?
10. What are the procedures adopted to plan the programmes ?
11. What are the types of arrangements made before starting an in-service training activity to facilitate its smooth running ?
12. What specific measures are generally taken during the organization of the in service education programmes to get the maximum benefit from them ?
13. What are generally the steps taken after the organization of a programme to ensure the implementation of decisions made ?
14. How is the in-service education programme evaluated at different levels ?
15. What is the place of research in in-service education ?
16. Does in-service education affect directly or indirectly in vitalizing other areas in education ?
17. How are in-service education programmes supervised ?
18. What are the incentives generally given to teachers to attend in-service training activities ?
19. How are the in-service education progammes at different levels financed ?
20. What are the other agencies organizing in service education programmes in the area ?
21. What are the difficulties faced at different levels in organizing the in-service education programmes and how can they be overcome ?
22. What can be the implications of the findings of this study to improve the in-service education programmes in India ? and lastly,
23. What is the overall assessment of the programmes ?

2. Delimitations of the Study

The study has the following limitations :

1. The study is limited to the in-service education programmes for elementary school teachers in the Philippines.
2. The study is limited to one institution at each level, viz., national, regional, divisional and local.
3. The study is limited to the in-service education programmes for public school teachers only.

3. Origin of the Problem and the Importance of the Study

Before joining the course in the Asian Institute for Teacher Educators, the investigator was working in the National Council of Educational Research and Training in India and had a major responsibility of assisting in the development of the in-service education programmes for elementary school teachers. In this connection he visited most of the centres in India, and participated in several conferences at national, state and local levels. He had also the responsibility to write guide materials in the quarterly Newsletter issued by the department. Having worked in the above experimental project in India for about two years, the course provided him an opportunity to find out how the programmes for in-service education can be improved qualitatively and expanded quantitatively on his return to India after the course. Of the in-service education programmes in the Philippines, the most significant feature which struck the investigator during the first month of his study at the Asian Institute was the universalization of the provision of in-service education programmes to elementary teachers. His country has yet to plan towards this ideal. He therefore considered it appropriate to study the programmes of in-service education in the Philippines and work out its implications for India.

The study is of great importance and practical value to the investigator. There is every likelihood of his working on his return to India on a similar post to develop the in-service education programmes for elementary teachers. The insight gained through this investigation will help him not only to narrate his experiences in the meetings to be held in his institution and to plan the in-service programme for teachers in India, but it will also be of great value to him during his visits to the centres and in the conferences with fellow workers at different levels. His experience will, thus, be of paramount importance in the planning and implementation of in service education programmes for elementary school teachers in India.

4. Definitions of Terms Used

In service Education—refers to all activities on the part of employed teachers that contribute to their professional growth and qualifications; for example, travel, professional reading, participation in supervisory and curriculum development programmes, attendance at the seminar session courses etc.[1]

Pre service Education—The academic and professional work in high school, normal school, college, teachers' college or university that a person has done before employment as a teacher.[2]

Workshop—An in service improvement activity planned and carried on by teachers and administrators to attack and study problems of such scope that many are interested.[3]

Conference—A meeting of a group of individuals, adults or youths to consider a particular subject.[4]

Seminar—A form of class organization in higher education in which a group of advance students engaged in research or advanced study meets under the general direction of one or more staff members of the college or university for a discussion of problems of mutual interest.[5]

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[1] Carter V. Good. *Dictionary of Education* (New York : Mc Graw-Hill Book Co., Inc., 1959), p. 550.

[2] *Ibid*., p. 410.

[3] *Ibid*., p. 609.

[4] *Ibid*., p. 120.

Symposium—A presentation consisting of two or more briefly prepared speeches (usually not more than four) representing different points of view on the issue under discussion.[6]

Elementary Education—The period of formal education beginning in childhood usually at the age 5 to 7 years and ending approximately with adolescence.[7]

Peso—Official currency of the Philippines, one peso being equivalent of Rs. 2/- approximately.

Bario—Used in the Philippines for a village.

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[5] *Ibid.*, p. 495.

[6] *Ibid.*, p. 545.

[7] *Ibid.*, p. 197.

CHAPTER III

REVIEW OF THE RELATED STUDIES AND LITERATURE

1- Related Studies

Several studies have been made on the in service education of teachers in the Philippines. No study, however, could be found, attempting to find out so comprehensively the working procedures of the programmes in the country. Therefore only those studies which are related in one way or another to the present problem are being mentioned.

Luciano Rellin[1] in his study found out the following five as most important objectives of the in service education programmes :

(a) To promote professional growth and efficient teaching.

(b) To familiarize teachers with subject-matter and sources.

(c) To stimulate self improvement among teachers.

(d) To equip teachers for leadership in the community.

(e) To orient new teachers to be effective on their jobs.

Basing his conclusions on about one hundred and fifty annual reports of the divisional superintendents, divisional academic supervisors and public school principals, he found out that the following significant methods were being employed to achieve the objectives :

(a) teachers' meetings and conferences.

(b) demonstration classes.

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[1] Luciano Rellin, "A Study of Current Practices of the In-Service Education of Philippine Public School Teachers" (Unpublished Master's Thesis, Arellano University, Manila, 1949).

(c) visits to schools.

(d) supervisory services like conferences, memoranda and issuance of bulletins.

T. Ruiz[2] reported the following difficulties of beginning teachers in rank order of their frequencies in the questionnaire study :

1. They have difficulty in maintaining good discipline.
2. They have vague idea of the objectives of teaching.
3. They get nervous if the visitors enter the class during the lessons.
4. Modern teaching techniques do not appeal to the pupils.
5. They find it difficult to find time for parent-teacher conferences.
6. They feel handicapped because of inadequate school library facilities.

To assist the beginning teachers, Ruiz recommended a well organized programme for these teachers, consisting of orientation programmes, directed visitation and observation, study groups, seminars, workshops and joint conferences of these teachers with the supervisors, principals and assistant principals, etc.

Layug[3] revealed in his normative survey study that administration and supervision, teacher-pupil relationship and public relations were among the most important subjects treated in the in-service education programmes. Among the different techniques used were teachers' meetings, inter-school visitation, observation, informal discussions, demonstration classes, seminars and open forums etc.

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[2] Teofila Ruiz, "Some Crucial Problems of Beginning Teachers in the Elementary Grades in Manila and Laguna" (Unpublished Master's Thesis. National Teacher's College, Manila, 1952.

[3] A. M. Layug, "A Study of the Five Year In-Service Education Programme of Public Elementary Schools in Pampanga, 1956-61" (Unpublished Master's Thesis, The National Teachers College, 1961)

Pradhan[4] found the following aims and objectives of the in-service education programme in the Philippines:

1. To upgrade the quality of education.
2. To demonstrate instructional, administrative and supervisory techniques and practices which are found effective.
3. To offer opportunities to teachers for professional growth.
4. To help new teachers to get aquainted with new rules and regulations pertaining to their vocation.
5. To develop evaluation criteria for assessing the outcomes of in-service education.
6. To stimulate teachers to conduct action research.
7. To develop leadership.
8. To demonstrate new practices on methods of teaching.

On the problems encountered in organizing the programmes, he reported inadequate financial support, lack of professional growth, insufficient follow up work, lack of active participation by participants and organizers, lack of proper planning, dearth of resource persons, lack of coordination and facilities.

Pradhan's findings were mainly based on a questionnaire study and documentary analysis. He has recommended incentives in the form of salary increments, certificates and promotions etc. He also recommends periodic evaluation of the programmes.

Llanera[5] discovered in her questionnaire study, supplemented by the interview method, that the programmes for in-service education were not cooperatively planned and based on teachers' needs.

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[4] Ratna Man Pradhan, ‘ In Service Education of Elementary School Teachers in the Philippines and its Implications for Nepal”,.(Unpublished Master's Thesis submitted to the College of Education, University of the Philippines, 1966.

. Carmen A. Llanera, "A Study of the In-Service Education Programmes for Public Elementary School Teachers in the Division of Rizal," (unpublished Master's Thesis, The National Teachers College, 1962).

Referring to the success of the programmes she reports that the phases partaining to objectives, subjects treated, methods and procedures were successful. But the programmes were not successful regarding the methods of planning and means of evaluation.

2. Related Literature

Pires[6] found out that following objectives are in view in one or the other country, while organizing in-service education programmes:

1. Upgrading the professional knowledge and competence of teachers.
2. Extending the general education of teachers.
3. Enhancing the qualifications of teachers in-service.
4. Providing opportunities for teachers to obtain increments in salary.
5. Raising the morale of teachers.
6. Improving public relations.
7. Providing training in community living.

The author further quotes as given below, the values, purposes or needs of in-service training, as recognized by the International Conference on Public Education convened in Geneva by UNESCO in 1962.[7]

(i) helping qualified teachers to deal successfully with the increasing complexity of the educational responsibilities of the school.

(ii) helping qualified teachers to keep pace with the rapid progress of science and the continual evolution of educational theory and practice as well as the development of culture in general.

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[6] Edward A. Pires, "A Study of the In-Service Training of Primary School Teachers in Asia," (An unpublished mimeographed report—UNESCO Regional Office for Education in Asia, Bangkok, Thailand), pp. 3-5

[7] *Ibid*., p. 6

(iii) enabling teachers throughout their entire career to widen their horizons and deepen their general culture.

(iv) enabling qualified teachers to study for a higher level diploma.

(v) providing qualified teachers with opportunities to take specialized courses in pedagogy or to qualify for other duties within the education service.

(vi) providing insufficiently qualified teachers in service with adequate general and professional training."

Stressing the need of coordination among the different agencies to organize in-service education programmes, the author says, "A careful planning of all programmes of in service training by the different agencies involved in such training, is, therefore, indicated in order to avoid wasteful duplication."[8]

The author reports the following difficulties in organizing the programmes :

"1 Lack of money.
2. Insufficiency of adequately trained personnel.
3. Shortage of teachers in the primary schools, which makes it extremely difficult for them to leave the schools.
4. Difficulty of travel.
5. Lack of needed material facilities.
6. Lack of enthusiasm among teachers.
7. Unfavourable leave conditions."[9]

Cottrell[10] gives the following reasons for the failure of in-service education programmes :

1. Failure to recognize the real concern and problems of the faculty.

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[8] *Ibid*., p. 20.

[9] *Ibid*.. pp. 63-64.

[10] Donald P. Cottrell (ed.), *Teacher Education for a Free People* (New York: American Association of Colleges for Teacher Education, 1956). p. 255.

2. Inadequate supervision of the programmes.
3. Failure to let the programme stem from the faculty.
4. Inadequate pre-publicity among faculty.
5. Poor training facilities provided.
6. Inadequate understanding of gains to be made by the participants.
7. Fear of starting.
8. Lack of coordination between the in-service and the pre service training.
9. Lack of coordination of methods used.
10. Lack of incentives.

H. W. Hightower[11] lays down some principles which should form a part of the fundamental philosophy of teachers and the in-service education programmes should endeavour to promote them among teachers.

These principles are :

1. Teachers must grow continuously in their own persons to expect their pupils to grow.
2. A teacher must believe that every child in her room can learn.
3. Teachers should recognize that their pupils differ in ability and achievement level.
4 Teachers must be able to adopt themselves to the changing conditions and the resulting changes in the needs of young people.
5. Teachers must know as much as possible about how a child learns, grows and develops.
6. Teachers should know that grcwth and welfare of the community is a part of the total school programme.
7. If teachers are to contribute to the welfare of the democratic way of life, they must administer their classes democratically.

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[11] H. W. Hightower, Some Operating Principles and Assumptions for Teachers. "The Journal of Teacher Education, Vol. VII. No. 3 (September, 1956) p. 213.

CHAPTER IV

RESEARCH PROCEDURES FOLLOWED AND SAMPLING PROCEDURE

1. Research Procedures

Keeping in view the intensive nature of the study, reliance could not be laid on a single technique. A variety of techniques were, therefore, used as tools in gathering data and information to find answers of the questions of the study. A description of the techniques used in this study is given below.

Documentary Analysis—Study of the different memoranda and some of the related publications of the Bureau of Public Schools was not only useful in understanding the development of the in-service education programmes in the Philippines; but it also provided the required information on several points of study as the aims and objectives of the programmes, responsibilities of developing the in service education programmes at different levels, nature of the staff manning the jobs at different levels, and strengths and weaknesses of the programmes as noted from time to time.

Reports of some of the conferences and seminars held and annual reports submitted to the higher authorities also revealed useful information, especially at the regional, divisional and the local levels. Some of the periodicals and pamphlets, concerning the study in hand were also consulted.

In fact, the study of these documents, provided the necessary background for preparing the questionnaire, conducting the interviews and attending the conferences later on.

Questionnaire—This technique was used because it was considered to be a good means to collect pertinent data and information, which could not be gathered by other methods. The information gathered through the questionnaire was utilized as the basis for the interviews.

The questionnaire was issued to four institutions, one at each level, viz., at the national level to the Bureau of Public Schools, at the regional level to the regional in-service education at Polo Bulacan, at the divisional level to the Divisional Education office, Pasig, Rizal and to the office of the District Supervisor, Malabon at the local level.

A copy of the questionnaire used appears at appendix A.

Interview—The interview proved very useful in this study and was mainly used for two purposes :

1. To clarify the replies in the questionnaire which were found doubtful and could be interpreted in more than one way.
2. To gather the data, which called for opinion and judgment as to the extent of the success of the in-service education programmes, the major hurdles in the successful running of the programmes and suggestions to improve them, etc.

The interviewees included Bureau specialists, Divisional supervisors, District supervisors, principals and teachers concerned with the in-service programmes.

The investigator also interviewed superintendents and teacher-educators of the normal schools at Iloilo, Bukidnon, Marawi City, Leyte, Laoag and Bayambang to gather opinions about the in-service education progammes at the different levels in the country. The opportunity to interview them was afforded during the educational trips to the south and the north of the Philippines. This also gave an opportunity to study the in-service education programmes undertaken by the training institutions in the country.

Knowing about the Vacation Institute at Baguio was a rare opportunity during the trip to northern Philippines.

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Attendance at Conferences—It was possible for the investigator to attend two conferences, one each at the regional and local levels. This provided a fair peep into the working procedures of these programmes. Another conference organized by the Bureau of Public Schools on 'Teacher Education' was attended by the investigator as an observer at Bukidnon. Though this conference had no concern with hte study in hand, it gave a glimpse of the general activities at the conferences organized by the Bureau.

2. Sampling Procedure

The study required the selection of one institution at each level. The method of 'purposive' sampling was followed in selecting the institutions at the regional, divisional and local levels for the purpose of convenience to reach the places. The Polo Bulacan In-Service Educational Regional Centre was selected first of all because of its being the closest centre to the University of the Philippines. The Divisional Education Office, Rizal, which falls in the service area of the above centre was selected again because of its proximity. But at the local level, the District Education Office, Malabon was selected on the advice of the Academic Supervisor of Rizal.

CHAPTER V

PRESENTATION AND INTERPRETATION OF THE DATA

The study seeks to find out the organizational and working procedures employed in imparting in-service education to the elementary school teachers in the public schools of the Philippines. The discussions on the different aspects are based on the information gathered through different techniques, as mentioned earlier. It may, however, be pointed out that the data was gathered from all the four levels at which these programmes are being organized, viz., national, regional, divisional and local, involving twenty four respondents, holding different administrative and teaching positions, as given below :

1. Bureau specialists————4
2. Academic supervisors———2
3. Subject supervisors—— ——5
4. District supervisors ————2
5. Principals——————6
6. Elementary school teachers——5

The number of respondents according to the different levels is as follows :

1. National Level—————4
2. Regional Level—————8
3. Divisional Level————6
4. Local Level——————6

The observations in the ensuing pages will also include the writer's impressions gathered while attending the two educational conferences, the organisers of which were kind enough to allow the investigator to ask some questions to the participants in the meetings, besides some individual interviews held by him to seek information about the organisation of in-service education programmes.

The chapter deals with some of the working procedures and the orgnisational set-up of the in-service education programme in the Philippines as mentioned in Chapter II.

A. Aims and Objectives of In-Service Education Programme.

It is of paramount importance to formulate the aims and objectives of a long term project like that of the in service education programme. It will further be helpful if the objectives are classified as general and specific, long term and short term and in relation to the different levels, where the activities are supposed to be organised. This will not only orient the various policies to the desired goals but will also facilitate the choice and use of suitable methods for organising the programme. Above all, they will provide a basis for evalution of the programme after they have been launched. They will serve to prevent the programmes from becoming haphazard and disorganised.

The procedure used in formulating the objectives, it must be pointed out, is as important as their actual formulation. People in authority have generally the tendency to consider that they are the most suitable persons to formulate objectives because of their superior academic and intellectual background. This is a great mistake which they make. If the programmes of in-service education are to succeed, the objectives must be evolved with the help of those who have to work them out. The purpose of the programme is to meet the needs and problems of teachers and they, therefore, must be allowed to participate in all the processes including the laying down of the objectives. It will be in the fitness of things, therefore, to evolve the objectives of in-service education programmes at the local level first and then reach the national level stage by stage, instead of their percolating from above. Another important thing for all concerned is to be clear about the objectives. The organization of the programmes to achiev the objectives, must be preceded by strong orientation programme about what the objectives are and it is also very necesssary to keep them in view while planning, organizing and evaluating the programmes.

Another fallacy regarding the objectives of in-service education programme must be done away with i.e. the objectives, once they have been laid down, should be rigidly followed in the future. No doubt it is necessary to work on the objectives evolved for a good deal of time, but sticking to the objectives for ever and never considering a change in them in relation to the needs, is against the very philosophy of a sound in service education programme. Opportunities need be sought from time to time to consider the continuation or dropping of the objectives already laid or inclusion of other new objectives according to the needs of the times.

The national aims and objectives of in-service education in the Philippines were first formulated in 1963 by the teacher education experts of the Bureau of Public Schools on the eve of starting the first ten BPS—AID—NEC regional in-service educational centres. There were fifteen objectives as communicated in Inclosure No. 2 to B.P.S. Memo No. 43, s. 1963 (Vide Appendix B of this report). The objectives were, however, revised in 1964 before the ten additional regional cenres were opened and and sent to all the twenty centres in Inclosure No. 1 to B.P.S. Memo No. 52, s. 1964.

The present investigation seeks to find out the extent of achievement of these eight objectives, as reported by all the respondents. It was considered necessary to get the opinion of all categories of persons involved in the programme, from the Bureau specialists down to the teachers, with a view to gauging the impact of the programmes on the field. Responses regarding the extent of the achievement of these objectives, given serially as provided in the Memo from the Bureau, are given in Table .

It may be noted that the achievements of these programmes have been rated the most for objective Nos. d, b and e and the least for Nos. f, g and h. It shows that the programmes have been successful in tapping various resources of assistance, demonstrating instructional administrative and supervisory techniques and practices in the area and for developing possible adoption techniques and procedures in supervision and administration. On the other hand, it shows that the success is reported the least, comparatively speaking, in stimulating action research, developing evaluative criteria for appraising the outcome and preparing brief annual reports for discrimination.

The interview with some of the respondents, however, revealed the inadequacy of the questionnaire as a reliable method of research. On questioning during the interviews as to how the supervisory practices and techniques have been affected by the in-service training programmes, the supevisors could not give satisfactory replies. One of them who rated this as very much successful with regard to this objective, revealed during the interview that it has not affected supervision at all. But there was a general agreement regarding the achievement of the objective of tapping local resources. Many of them agreed with the investigator that one potent reason for the achievement of this objective may also be the community school movement, launched long back in the country.

Another fact revealed during the interview was that objectives laid down still need to be better known in the field. In fact, it was a great surprise that one of the two district supervisors did not know that the Bureau supplied at any time a list of these objectives. She liked the objectives very much when the investigator showed to her the list and she wanted to get them typed for record in her office.

The investigation also sought to find out which of the above objectives are difficult to achieve. Eighteen out of the twenty four responses revealed that the objective 'd' and 'f' are most difficult to achieve. During the interviews, it was found out that the teachers have very little training to undertake experimentation and action resarch. Three respondents replied that none of the objectives is difficult to be achieved.

The respondents were also asked to list new objectives, which they would consider to be important to be achieved through these programmes. Some of the suggested objectives are given below :

. To develop among administrators and teachers the right attitudes to work, dedication to service and the desire to develop one's self to the fullest, both professionally and as an individual person.

2. To promote international understanding and goodwill.

3. To broaden the liberal education background of teachers and supervisory staff.

4. To sharpen skills and deepen insights in recognizing, analysing and attacking instructional, administrative and supervisory problems and difficulties.

The investigator feels that these broad national objectives as laid down by the Bureau for these programmes are adequate, but that there is need to evolve specific objectives for each level to give a right direction to the programme of in-service education. The objectives at the local level should be stated as simply as possible to help the teachers to understand them and try to achieve them. This can be best done by organizing work conference for the different levels of educational workers.

TABLE I

SUCCESS IN THE ACHIEVEMENTS OF THE OBJECTIVES OF IN-SERVICE EDUCATION, AS INDICATED BY THE TWENTY FOUR RESPONSES AND EXPRESSED IN PERCENTAGES.

Objectives	I Very Much	II Much	III Somewhat	IV Not Much	V Not at all
(a) To promote a well-organized and carefully planned continuing in-service education programme designed to upgrade administrative, supervisory and instructional competencies of teachers, head teachers, principals, supervisors and superintendents towards improving the various phases of school work within each service area.	12·5	37·5	33·0	17·0	—
(b) To demonstrate instructional, administrative and supervisory techniques and practices which have been found effective and calculated to meet local needs.	50	37·5	8·5	4·0	—
(c) To develop for possible adoption techniques and procedures of internship or practicum in supervision and administration.	37·5	12·5	17·0	25·0	8·0

(d) To tap all resources of assistance i.e. division and general office personnel, college- and universities, civic organizations, teachers' profess sional organizations publishers of professional books, AID and PCV headquarters, etc., in carrying out a continuing programme of in-service education.	62·5	17·0	2·05	—	—
(e) To stimulate the field in the preparation of the instructional, supervisory and administrative materials that may be printed in the three regional materials production centres.	17·0	21·0	46·0	16·0	—
f) To stimulate the personnel of the in service education centres in conducting action research and in preparing evaluative instruments and tests.	—	4·0	8·0	34·0	54·0
(g) To develop evaluative criteria for appraising the outcomes of the in service education activities.	8.0	37·5	17·0	33·5	04·0
(h) To prepare brief annual reports on worthwhile activities and practices for dissemination in the service area and in various regional in-service education centres.	8·0	12·0	17·0	29·0	34·0

B. Organization and Administration of the Programmes and Specific Responsibilities at the Different levels

Planning the organization of in service education activities for teachers in any country requires allocation of specific responsibilities at different levels, viz., central, regional and local depending upon the total area, territorial differences, social and economic conditions of the regions and educational background of teachers. Healthy development of the programmes is not possible if the responsibility of organising the programmes is entrusted only to the central or local agency. The progammes are likely to be unrealistic and unrepresentative of local needs, if it is the central agency only which is responsible for organising them; whereas the benefit of the experiences of others and guidance from the experts in the country are likely to be lost, if the obligation of organising these programmes is retained only at local level. It is, therefore, very necessary that the responsibility should be so divided at the various levels as would ensure maximum dividends.

It may, however, be logical that the central agency plays a major role in the beginning when the programme is launched in the country; but the responsibility should be shifted more to the local level as time passes and the local sector develops leadership competencies. The centre, at the latest stage, may have only consultative duties, entrusting supervisory and coordinating functions at the regional levels and organising freedom at the local level.

But, at no time, can any of these sectors function in isolation and independently of each other or one another. Even in the beginning, the central agency needs to look not only to the needs of the local sector to make the programmes successful, but also to find out how far the programmes have been effective. Above all, there is need to take care of developing local leadership in manning these programmes.

With this in view, the investigation seeks to find out the specific responsibilities of different levels of workers in the country in the organization of in-service education programmes.

The responsibility for the organization of the programmes of in-service education in the Philippines is nominally shared by officials at the four levels, viz national regional, divisional and local. But inspite of the existence of these levels, most of the responses revealed that it is the Bureau which is virtually responsible for the organization of these programmes. In fact, the programmes of the Bureau are organized at the regional centres and the aims and objectives of the two levels and even the organization of the programmes are mostly the same. The establishment of these centres only facilitates the work of the Bureau in organising its own programmes there. The specialists from the Bureau go to organize the programmes. The job of the two levels is, therefore, the same, except for the programmes, which aim at coordinating the activities of these regional centres at national level. The programmes at the regional centres are announced by the Bureau and the same activity is repeated in each centre. To give an example, G. L. No. 158, dated October 10, 1966, from the Bureau of Public Schools, announcing the programme for the holding of work-conferences in the school year 1966-67, intimates the dates fixed for the same activity at different centres, issues advice regarding the number of participants to be selected from each category i.e. divisional supervisors, district supervisors, principals etc. attaches a schedule of activities to be followed and states the objectives of the conference. The letter is addressed to the superintendents of the regional centres. The procedure smacks of a highly centralized system, which can hardly be conducive to the maximum effectiveness of the programmes.

At the divisional level, the Bureau advises in the same letter that echo-conferences should be held and the same should be patterned after the regional plan. Thus, this level has also to follow what the Bureau allocates to it. There is no indication in the letter of the organization of the same programme pertaining to the local level; but during the interview with the workers at the divisional level, it was revealed that their expectations were similar.

Thus, though the above-mentioned levels give an obvious impression of decentralization of the programmes, the working procedures reveal great rigidity and centralization, which is not healthy for the organization.

The responses to the specific responsibilites at different levels revealed that the national and regional levels are supposed to provide leadership and the divisional and local levels are to follow them.

The local level institution studied in the present investigation, however, provides a good picture of the organization of these programmes which are largely due to the initiative of the district supervisor, principals and teachers of the particular area. The district supervisor has specialized in the area of in service education in her graduate work and is very enthusiastic about the work. Her planning and working of the programme of in service education present an ideal picture of how personal interest and initiative in the field can make the programmes successful. The success of the work in this district cannot, however, be ascribed to the general scheme of in-service education in the country because of the following reasons :

1. No financial assistance has been provided by the Bureau to run the programmes.
2. No physical facilities have been provided for this purpose.
3. The in-service education programmes, as organized in the area, have no relation with the programmes of the division. It is surprising to find that not

teacher or principal or supervisor, was invited to attend the programmes in any of the aforesaid levels in the year 1966-67, from this district

4. The programmes organized in the area are all based on the principle of self help and local initiative.

The discussion of the programmes at the local levels cannot, therefore, be considered respresentative and is only, an exception. It will be very useful if a case study of this institution is undertaken by any investigator and the efforts made there are published to give it wide publicity and to encourage such initiative.

Regarding the means of coordination between the different levels, the responses at the national, regional and divisional levels revealed the holding of echo-conferences and the receipt of their reports, while the district level responses show that there is no coordination at all between the local and the other levels.

C. Curriculum of In Service Education

Curriculum for any programme is one of the foremost factors to be considered and method and other organizational aspects are to be designed to achieve its objectives. 'What' we have to give or 'what' the teachers need, will come first of all, and it is to achieve this that the best of 'how' and the best of 'when' and 'where' are to be decided. The subject matter to be imparted during the in-service education courses occupies a very important place.

It is very important for the institutions imparting in-service education to see whether the curriculum they are planning really meets the needs of the teachers and schools. The whole organization will fail in its objectives if this basic fact is not taken care of. The content of the in service education should come mainly from two sources, viz. :

1. From the needs of teachers.
2. From the needs of schools.

It is beyond the scope of the present investigation to find out whether the curriculum chosen by the in-service education institutions in the Philippines really represents the needs of the teachers. It tries to find out only the general trends in the selection of the curriculum areas.

At the Bureau level, it was found that programmes were organized in 20 regional in-service centres, in science, language arts, art education and music, action research and health and physical education. The duration was generally of two weeks each, with an average attendance of sixty participants, consisting of supervisors, principals, head teachers and classroom teachers.

In the regional centre, under investigation, only two programmes were organized in the current academic year, one for two weeks and another for one week under the general caption of 'Improving the Quality of Education'. The programmes were repeated at the division level.

At the local level, the district organized a number of activities covering all the subject areas, but special stress was laid on 'modern mathematics'. A long list of 62 activities was received from the district supervisor. Though many of the programmes were continued, no programme was organized for more than a day. The interview revealed that some of the programmes were just for two hours in the form of a demonstration followed by a discussion or a lecture followed by an open forum.

The investigator feels that programmes at regional level should also mention special topics to pin-point the approach. General caption may be useful for a conference, but for the other programmes like workshop, seminar and orientation course, the topics should be named. It will also help in keeping the discussions within the limits and it will be easy for the decisions to be implemented.

The curriculum field needs also to be widened. The programmes at all the levels should cover many aspects of the school curriculum, but different aspects in different programmes.

D. Physical Facilities Available

The success of any in service training institution is largely dependent upon the various kinds of physical facilities it has such as audio-visual, library, curriculum laboratory, science laboratory, mimeographing and printing, residential accommodation, conference rooms, etc. Absence of these facilities will not only prove a hindering clog in the smoothly running wheel of the programmes; but the participants are less likely to be attracted to the institute. It is, therefore, very important that financial provision be made in the form of a lump-sum non-recurring grant in the beginning and later on periodically, to meet the needs of the institute from time to time. This should be in addition to the regular grants for recurring expenditure every year. If the in-service training function is expected to be discharged by an institution already established, consideration should be given to the existing resources of the institution. It is also necessary to consider what resource facilities are easily available in the community for use by the institution. The investigator tried to find out the provision or existence of these facilities in the institutions under study.

As shown in Table II, the physical facilities are good at the regional and national levels, but they need to be improved a lot at the divisional and local levels, being most unsatisfactory at the latter level.

To another question whether the facilities which are not available in the institution, could be borrowed from the other local institutions, it was found that at the divisional level, facilities for a curriculum laboratory cannot be made available at all, while the others can be made available with difficulty. At the local level, the facilities of a curriculum laboratory and a library cannot be made available, but provision can be made, though with some difficulty, for audio-visual education, a science laboratory and residential accommodation. The rest of the facilities can be provided very easily from the local institutions, Thus, attention requires to be given to improve the physical facilities at the local and divisional levels.

TABLE II

AVAILABILITY OF PHYSICAL FACILITIES, AS RATED BY THE HEADS OF THE FOUR INSTITUTIONS

	National	Regional	Divisional	Local
(a) Audio-visual	Good	Good	Not satisfactory	Fairly satisfactory
(b) Library	,,	,,	,,	Not satisfactory
(c) Curriculum Laboratory	,,	,,	,,	Fairly Satisfactory
(d) Science Laboratory	,,	,,	Good	Satisfactory
(e) Mimeographing/Printing	,,	,,	Very good	Not satisfactory
(f) Residential accommodation for the delegates	,,	,,	Not satisfactory	,,
(g) Conference rooms for the meeting of delegates	,,	,,	Fairly satisfactory	Satisfactory
(h) Furniture for use during the programmes	,,	,,	,,	,,
(i) Pilot schools or good elementary schools for visits of delegates	,,	,,	Good	Good
(j) Helpful school community relations	Very good	,,	Very good	Very good

E. Nature of the Staff

In view of the importance of in-service education programmes, it is necessary to ensure that adequate staff is provided to the institutions concerned to provide the right kind of leadership in the field. The staff responsible for the programmes may come from two categories of personnel, viz., full-time and part-time. The importance of having some full-time staff members to initiate, implement, coordinate, evaluate and follow up the programmes need hardly be overemphasized. Some of the members may, however, be allocated part-time duties. But how far it is advisable to expect a person to provide part-time services will depend upon many factors, the most important of which are as follows :

1. What are the duties expected of him/her ?
2. Can his/her present duties be usefully combined with the responsibilities of in-service education for the mutual benefit of both ?
3. Has he/she sufficient time to spare from these programmes ?
4. In what institution is he/she working now and will this institution also draw any benefit in return by allowing its staff members to engage in in-service education programmes ?

The qualifications and suitability of the staff for in-service education is another vital factor to be kept in view. The staff in such an institution should not only possess the requisite academic and supervisory experience but should also have an understanding of the different roles of his job and should know the modern techniques of working with adult groups. Above all, any member of the staff of such an institution should have a keen desire to grow and engage himself in in-service education activities to keep him abreast of the latest development in the field.

In the Philippines, the investigation reveals that the staff at the national level consists of the Bureau specialists with a project-executive, in charge of in-service training and pilot schools. As the programmes of the Bureau are organized at the regional centres, there was a general feeling that more staff members at the bureau level may not be required. At the regional centre, the academic supervisor of the division where the centre is located, is the project director. At the division level, again, the academic supervisor is responsible for organising the programmes, while at the district level, the district supervisor and the local principal have the responsibility for the in-service training of teachers. It can be safely concluded that the staffing pattern of the in-service training programmes in the Philippines is very poor at all the levels. The important place of the supervisors in the programme cannot be ignored, but with the heavy administrative and supervisory responsibilities which they have to shoulder, they may not be able to attend to this part time job satisfactorily. The interviewees at the bureau and regional levels, suggested that there should be permanent staff at the regional centres, consisting of Dean of Instruction an assistant Dean, three permanent staff members for instruction and five more permanent positions as leaders in the different areas of the school curriculum, besides secretarial staff, janitors and matrons. At the division level, there is need for at least one full time official to coordinate and supervise the programmes in the area.

F. Slection of Time and Place

For the achievements of the objectives of the programmes, it is necessary to consider when and where they are to be organized. If the programmes are always arranged during school hours, the managements of the schools may resent on the excuse that the classes suffer when the teachers go to attend the programmes. If the courses are always held during holidays, teachers may take it as a heavy burden on their personal time. A healthy combination of the two, therefore, needs to be worked out. Similarly if the programmes are always held at one place, it may tend to be boring. But a change to an equally suitable place once in a while, may provide new enthusiasm.

The responses show that the programmes in these institutions are always organised during school days. As regards the places, the programmes at the regional and divisional levels are always held in the regional centres and divisional offices respectively because of the facilities. At the district level, the venue is always changed from one school to another school. The criteria for selecting the place at this level are accessibility to delegates, availability of human and material resources and the needs of those involved in the programme. The local people are involved by direct participation. The district office provides professional services and moral support.

G. Methods of In Service Education

Increased knowledge of group procedures and working with adults has brought forth a greater variety of new methods of in-service education. Research and experience have established the superiority of one or the other method in dealing with a particular topic or situation. The staff of the in service education programme has, therefore, to carefully select methods and use them to elicit the best results.

The methods must satisfy the well-accepted principles of working, for example,

1. Involvement of the participants and providing them with opportunities to grapple with the different problems they are facing.
2. Climate of freedom to express themselves.
3. Opportunities for creativity.
4. Shifting of responsibility from one to another.
5. Giving opportunities to people to relate themselves to others.

6. Attending to individual and group problem-solving processes.
7. Creating atmosphere which is conducive to building mutual respect, support, permissiveness and creativeness.
8. Developing the simplest possible means to secure through decisions to actions.
9. Encouraging teachers to test and try out ideas and to plan in real situations, etc.

In the light of the above and other principles, it is to be decided whether workshop, seminar, conference, role playing symposium, debate or any other or a combination of these methods will be suitable to deal with a particular topic. One good procedure may be to involve the participants also in deciding what procedure should be adopted. It will bring greater participation from them.

The most preferred methods of in service training in these institutions are lecture, demonstration, seminar, conference, open forum and workshop and the least used are panel discussion, role-playing and symposium. The methods used are selected keeping in view the objectives, time and resources available, as revealed by the regional level responses. At the local level, the methods are chosen through concensus, arrived at in a conference of all the persons concerned.

H. Selection of Participants

Sufficient care needs to be taken in selecting the participants of any programme. The aims to be achieved through a particular activity will guide the procedure of selecting them. If the activity is meant for one category as untrained teachers or newly recruited teachers or mathematics teachers, etc., the invitees should come from that particular category. Sometimes it will be required to call people from one level only, but on many occasions, people from different levels may be needed, e.g., from teachers, principals and supervisors.

But an important point to be kept in view is the common interest of the participants in that problem to ensure maximum participation and utilization of the discussions afterwards.

Participants at the regiona and divisional levels in these institutions consist of supervisors, principals, head teachers and teachers of pilot schools. Teacher-educators and community members are invited sometimes as resource persons. At the local level, principals, headmasters and teachers are invited. At all these levels, the participants sometimes come from all the above categories, but at other times a separate group of only one category is invited. The respondents were of the view that it is sometimes useful to invite them together; but they should be given opportunities to meet separately also.

The participants are generally selected by the divisional supervisors for the programmes at the regional and divisional levels but at the local level, the participants are selected by the principals and head teachers. The district supervisor sometimes suggests the names of the participants. The criteria for the selection of the participants is, in all cases, the interests and needs of the teachers and the schools. The number of participants in each programmes varies rom 5 to 60 as shown in Table III.

TABLE III

NUMBER OF PARTICIPANTS IN AN IN SERVICE TRAINING PROGRAMME AT THE DIFFERENTLEVELS

S. No.	Level	No. of Participant		
		Generally	Minimally	Maximally
1	National	100	(Not given)	150
2	Regional	40	(Not given)	60
3	Divisional	50	10	40
4	Local	25	10	40

I. Service Area at Different Levels

The area an institution should select to serve depends on many factors such as the distance of the farthest school, the total number of participating schools and teachers, the purposes of the programmes of the institution and the facilities available to involve them etc. So the success of the programmes is to be determined from this point of view also.

An attempt was made to find out this fact in the institutions under study. At the national level programmes, the whole country is covered. The country is divided into 20 regions for the purpose of in-service education programmes, each region being served by one centre.

The regional centre under study covers five school divisions, consisting of two provinces and three cities. No data could be provided regarding the number of elementary schools, district supervisors and training institutions in the area. The approximate number of elementary school teachers in the area was given as 13,000. The project director is of the view that it is quite feasible to cover the area.

The division level institution under study covers an area of 1,026 square miles with 187 elementary schools, 27 supervisors and 5,193 elementary school teachers. According to the supervisors, it is feasible to cover the area ,but it cannot be done effectively and efficiently.

At the local level institution under study, there are 11 elementary schools, covering three hundred teachers. The district supervisor expressed the view that area can be covered if delegation of authority and right leadership is carefully selected and harnessed.

J. Planning Procedures

Planning procedures determine to a great extent the promise of the success of the programmes. The programmes may be formulated in the beginning of the year or the semester. The needs of the participants should be determined objectively and priorities should be fixed. But what is most important is the fact that the programmes should be planned cooperatively, involving representatives from all categories of people to be affected. Involvement of institutions with a specialized knowledge of the field is also very important. Planning the programmes well in advance will enable the organizers to make the arrangements well in time and the participants to prepare well for them. Above all, it will help them to see the programmes in their totality in the light of the objectives laid down.

Though a consistent following of the programmes chalked out according to the above procedures is desired, rigidity should not be adhered to. In case the need arises, the programmes should be changed whenever and wherever necessary, based on an objective assessment and evaluation of the situation.

The present study reveals that the in-service education programmes in the Philippines are generally planned before the beginning of the year at the national, regional and divisional levels and are mostly followed very rigidly. At the local level, though the planning is done before the year starts, frequent changes are made according to the needs of the teachers and the schools. To ensure that the proposed programmes fulfil the needs of the schools and teachers, an appraisal of the previous year's programmes is made, pre-conference meetings are held to chalk out the programmes and reports are asked for from the supervisors before the plans are made. Only at the local level, are the teachers involved quite frequently. Cooperative planning is always done at the local level, but at the other levels, it is sometimes ignored. No other institution is involved in planning at the national, regional and divisional levels, but at the local level, the respondents mention that the teacher training institutions are involved.

K. Pre-organization Arrangements

After the decision has taken place to organize a programme and the participants have been selected, a good deal of preparation is necessary before the initiation of the same. A wild plunge in initiating the programme will hardly help in bringing about the desired results. Final invitations to the participants, acquainting them with the types of experiences they are likely to have will lead to better participation by them. A number of measures may be taken to prepare them, e. g., sending a working paper, a bibliography, a statement of their specific role in the several proposed activities etc. They may also be asked to give suggestions on these matters.

The institution has also to make arrangements for the stay of the participants, for their reporting and for the allotment of duties among its own staff members. The resource persons should be informed well in time and in case substitutes are necessary, they should be arranged.

The responses revealed that invitations to the participants in the programmes at the national, regional and divisional levels are generally sent 2 to 4 weeks before the starting of a programme, but at the local level it is only 2 to 3 days in advance. The working papers are always prepared at the national and regional levels and sometimes only at the divisional level. At the local level, a working paper is never prepared, but the subject matter is discussed in advance. No other measure is reported to be taken by any of the institutions to prepare the participants. The invitees at all levels are required to inform whether they are joining the programme or not and a waiting list is prepared in advance to invite other participants, if those proposed, decline to join. At the national, regional and divisional levels, a person is always designated to register the participants, but at the loca level this is rarely done.

I. Practice During the Programmes

The time for the organization of a programme is an opportunity for giving practical shape and form to the plans as formulated earlier. The different activities undertaken during this period are, therefore of great significance. The following are some of the most significant steps taken during this period :

1. The introductory session, which will not only acquaint the participants with what they have to do, but provide them with the necessary inspiration to undertake the task.
2. Measures to sustain the interest of the participants through-out the period.
3. Evaluation of the programme, formal as well as informal.
4. Facilities provided like library, observation, field trips, etc.
5. The valedictory session, which will not only provide an opportunity for finalizing the plans to be followed in terms of action points, but may be an opportunity to get an inspirational message to implement the decisions.

The responses revealed that an inaugural session is always held in all the four institutions on the eve of starting a programme and it consists of one or more features such as a talk by an experienced educationist, community singing, a short cultural hour, a sharing period or discussion on the tentative schedule. To sustain the interest of the participants in the daily routine, refreshments are served, demonstrations are organized, cultural programmes are held, field trips are arranged and the attendance is recorded. The programmes are evaluated while they are going on by a committee on evaluation, consisting of the participants.

Among the other activities undertaken during the organization of the programmes, the issuing of newsletters and library reading, are most significant. The practice of issuing a newsletter is very useful. The investigator went through a few of the newsletters issued during the national, regional and local programmes. He is of the view that such material helps the participants to feel that their contribution is recognized by being recorded and they also carry details of what they discussed. This will naturally facilitate the implementation of the decisions made.

M. Follow-Up Activities

There can be no guarantee that the decisions taken during the programmes will be implemented, if follow up activities are not undertaken regularly and seriously. Action taken by a particular participant may be postponed because of a difficulty he faces, the solution of which appears to be beyond him. A timely help at this stage through the visit of any of the staff members of the institute or through correspondence can help him to continue with his project. It is, therefore, necessary to keep in constant touch with the participants.

Follow-up activities have another great advantage of providing insights to the institute in its own organisation which can help in vitalizing their further programmes.

All the institutions under study prepare reports of the programmes and either mimeograph or print them, except at the local level where this is done only sometimes. These reports are sent to other institutions at the first three levels, but at the local level, the reports are supplied to the schools involved and a summary of these programmes is sent to the divisional academic supervisor, along with the yearly report of the work of the district.

The present study reveals that at the national and regional levels, the supervisors in the general office and in the field are responsible for the follow up of the programmes; but at the divisional level the supervising staff of the division does the follow-up work. At the local level, the main responsibility is that of the supervisor, though the responses showed that all concerned, including principals, headteachers and teachers share this responsibility. The methods used for follow-up activities include visits, correspondence and teachers' reports. The needs and or points of weaknesses discovered during the follow-up are considered at all the levels for remedial work in subsequent activities. The follow-up also helps in improving group procedures and techniques in future programmes and also for revising phases of emphasis for the supervisory staff.

N. Evaluation of the Programmes.

Evaluation has been defined as "the process of ascertaining or judging the value of an amount of something by careful appraisal."[1] This is an important step in assessing the progress towards acknowledged goals and purposes of the programme. Evaluation of in-service training programmes, however, is a very delicate issue because the outcomes to be measured are in terms of behavioural changes, which are very difficult to assess. The matter is, however, too important to be left unattempted. The right procedures, if adopted, may succeed in evaluating the programmes. So, a variety of techniques may be adopted to assess the impact of in service education programmes. A combination of modern methods like observations, interviews, rating scales and questionnaires are likely to show the progress achieved. Again, the task of evaluation cannot be left to one category of individuals; rather, teachers, principals, community members, supervisors and others should all join in the evaluation of these programmes.

The programmes of in-service education in the institutions under study are evaluated through visits, observations and interviews; but sometimes rating scales and questionnaires are also used for the purpose. At the divisional and local levels, periodic reports from the institutions concerned, also serve one of the important means of evaluation. The responsibility of evaluation rests with all the categories of people from teachers to supervisors in the bureau at national and regional levels; but for the divisional level programmes, teachers, principals, district supervisors and divisional supervisors evaluate the programmes. At the local level, teachers, principals and district supervisor do the evaluation.

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[1] Carter V. Good. *op. cit* p. 209

O. Place of Research

Undertaking research is one of the important means of growth of an individual. It helps in the development of the scientific attitude and engenders objective thinking in a person. The researcher learns to feel that there are several approaches to a problem. Above all, he gets to know the researches already done in the area while trying to understand the related studies. A study of the related literature provides a good opportunity to know the views of various thinkers on the topic. Doing research is not only one of the best ways of self growth as discussed above; it is also one of the most interesting and absorbing techniques as the researcher gets motivation and satisfaction from the constant thought that he is going to produce something new or discover a new dimension to an idea. Encouraging the undertaking of research, therefore, should be one of the chief functions of an in service education institute.

All the twenty four responses in this study, show a concensus over the fact that the undertaking of research by teachers is one of the important means of in se vice education. The following measures have been adopted in these institutions to encourage research in schools.

1. Action research is offered as a curricular study in the regional centres.
2. Guidance is provided in undertaking specific researches.
3. The researches undertaken by the teachers are published.
4. Journals having research reviews are supplied to the schools.

The major areas of research undertaken by the institutions have been reported as study of drop outs, teaching of social sciences and general science and school-community relationships.

The respondents at the national, regional and divisional levels generally opined that some teachers have the competence required to undertake research; but at the local level all the respondents say that none of the teachers is competent to undertake research. Among the general difficulties mentioned in undertaking research in the schools are lack of skill in systematic research and lack of time. It was surprising to find, however, that with all these replies provided in the questionnaire, no report of a research study could be made available to the investigator during his visits to these institutions.

P. Vitalization of Other Agencies.

Organization of in-service education is only one aspect of the totality of the programme of teacher preparation and teacher improvement. Participation in this programme, benefits not only those who receive it but even those who impart it. The latter get an opportunity to get a realistic view of the situation the knowledge of which may be utilized by them in other areas such as the pre-service education programmes and the supervisory services. This is the reason why a coordinated and cooperative approach to the organization of in service education programmes has always been advocated.

Nineteen out of the twenty four respondents in the institutions under study mentioned two agencies which have been vitalized by the in service education programmes, viz., supervisory services and school-community relations. The rest of the five mentioned only supervisory services. The suggestions given to extend these benefits can be summarized as below:

1. There should be a better coordination of the programmes at the different levels.

2. There should be continuous evaluation of the impact of the programmes on the field.

3. All the co-operating agencies should be involved more in planning, executing and evaluating the programmes.

Q. Supervision of the Programmes

Supervision here means guidance as the term is used in the modern sense. It is essential that persons with superior knowledge should render their expert advice from time to time to improve the programmes. An effective programme of supervision should use the modern supervisory techniques as frequently as possible.

The director and the general office promotional staff supervise the in service education programmes in the Philippines at the national level ; the Bureau of Public Schools supervises the programmes at the regional and divisional levels ; and the district supervisor at the local level. During the interviews, it was found that the supervisors at the divisional level supervise the in-service education programmes at the local level.

There is no definite number of times that an institution should be supervised. The supervision of in-service education is generally a part of the general supervisory service. The supervision is conducted through visits and post-programme conferences. At all levels except the local, the responses showed that supervisory services help in the promotion of the in service education programmes ; but at the local level, most of the respondents opined that because of the lack of mutually arrived goals at the district and division levels, the supervision from the two levels sometimes confuses the issues.

R. Incentives

Incentives, as provided in any programme, go a long way in determining the successof a programme. In the case of in-service education programmes, they serve to motivate and attract the teachers to actively participate in the different activities designed for their growth and development and to voluntarily implement the decisions they have taken to improve their conditions. In the absence of suitable incentives, there may be an overall lethargy to attend the programmes.

Attraction to any programme will depend upon the incentives, it provides, and this is much more true in the case of in-service education programmes for teachers as their attendance at these programmes will entail more work on their part to improve their ways of working with children. Proper incentives will, thus, play an important role in the success of these programmes.

The only common incentive given in the four institutions under study is the issuing of a certificate of attendance to the participants in the programmes. At the local level, the district supervisor replied in the questionnaire that the incentives are intrinsic. On requesting her to clarify her phrase further, during the interview that the investigator had with her, she revealed that the staff is inspired and encouraged to grow and experiment with the new techniques and that this provides the best form of incentives. None of these four institutions is providing courses meant for the upgrading of the teachers' qualifications.

S. Financing

Financing may not be the main single factor to determine the success of a programme, but it plays a very vital role in the attainment of the desired objectives of a scheme like in-service education. Money is required not only for the establishment of an institution and for the provision of the physical facilities as discussed earlier; but it is vitally necessary to implement, follow-up and evaluate the programmes. In the provision of incentives, monetary incentives, with all the criticisms levelled against them, prove useful to a great extent. Adequate financing of the programmes is, therefore very important.

The study reveals that there is no yearly budget with any of the four institutions for organizing the in-service education programmes. At the regional level, however, a non-recurring grant was provided before the opening of the centre for the building, library and the other necessary equipment. This came from international and other agencies like P.P.S.T.A. Asia Foundation and UNESCO. At present the expenses are being met from the school funds, the contributions of P. T. A. 's, teachers and registration fees. Travelling expenses for attending national and regional level programmes are paid from government sources. The suggestions given by the respondents in this respect are given below :

1. Specific governmental budgetary outlay should be provided annually.
2. Assistance should be made available from social agencies like the P. T. A., the barrio council and the municipalities.
3. The school funds may also be allowed to be spent on these activities.

T. Other Agencies.

Teacher preparation being a task of supreme importance, several organisations like teacher training institutions (pre-service), in service education centres, the supervisory staff, teachers' organisations and the local schools themselves may make attempts to provide activities for the further growth of teachers. It is, therefore, useful to know what these organizations are doing. It will not only avoid duplication because of ignorance of activities of others, but will also make possible the assistance to be rendered by every organization to achieve the common objective of teacher improvement.

The study reveals that at the local, divisional and regional levels, no other agency has been mentioned by the respondents as being concerned with the organization of in-service education programmes. At the national level, mention is made of the attempts in this regard of the Philippine Normal College, the University of the Philippines, the public normal schools, the Baguio Vacation Institute and some of the private colleges.

U. Difficulties and Drawbacks

Difficulties are a natural phenomena in an on-going brogramme of qualitative improvement like that of in-service education. An attempt, however, has to be made to analese the difficulties scientifically and to find out the solution to overcome them.

This study revealed that the following difficulties are generally faced by the workers in the field :

1. Insufficiency of funds for the participants and for the operational expenses for conducting the programmes.
2. Inadequate administrative support to the programmes.
3. Lack of staff for conducting the programmes.
4. Inadequate library facilities.
5. Over centralization of the programmes.
6. Lack of an atmosphere of continuing dialogue at all levels.
7. Lack of audio-visual materials at the local and regional levels.
8. The regulations prohibiting teachers' meetings on Saturdays.
9. Lack of incentives for teachers.

Besides the above difficulties faced in the development of the programmes, the respondents present the following drawbacks in the existing programmes.

1. The domination of the Bureau of Public Schools cripples local initive.
2. The programmes are mostly over ambitious and the expectations are too high to be achieved.
3. The follow up actvities are very poor.

4. The programmes are generally organised because of the vested or special interests of the supervisors.
5. The programmes do not represent the real needs of the teachers and the schools.
6. There is inadequate planning at all levels.
7. There is much duplication of the programmes because of lack of coordination.

V Overall Assessment of the Programmes

The respondents were required to rate overall achievement of the programmes on a five-point scale.

Table IV shows the rating of the programmes by the respondents.

TABLE IV

SHOWING THE SUCCESS OF THE PROGRAMMES AS RATED BY THE TWENTY FOUR RESPONDENTS

Serial No.	Nature of Rating	Number of the respondents	Percentage of responses
1.	Very successful	——	——
2.	Successful	14	58.0
3.	Satisfactory	4	17.0
4.	Fairly satisfactory	2	8.0
5.	Unsatisfactory	4	17.0

Most of the respondents are of the view that the programmes are successful. But during the interviews with the investigator, most of the respondents stated that there is great need for further extension of programmes. At the local level, the majority of the respondents expressed the view that the programmes at the national and regional levels are unsatisfactory, at the divisional level they are satisfactory, but at the local level they are very successful.

CHAPTER VI

SOME OTHER SIGNIFICANT FEATURES OF IN-SERVICE EDUCATION PROGRAMMES FOR ELEMENTARY SCHOOL TEACHERS IN THE PHILIPPINES

Having studied the in service education programmes for teachers at the four levels, an attempt was made to gauge some of the other significant features of the programmes in the Philippines with the purpose of looking at their totality. This concerns mainly the role of the pilot schools, the normal schools, the Baguio Vacation Normal School, the In Service Training Centres, the Materials Production Centres and the holding of national conferences for the improvement of teacher education.

All these efforts were started in 1953 with the help of the U. S. Aid Programmes when a number of projects were started to improve the different aspects of education. The teacher training project aimed to rehabilitate and equip the diffierent normal schools in the country and provide them with technical assistance. The curriculum development project provided for the establishment of a Central Curriculum Laboratory with emphasis on the development of improved curriculum contents and materials. In 1956, the secondary education project was set up, with the organization of experimental demonstration high schools. In 1959, the elementary education project was initiated and in pursuance of the same, 105 pilot elementary schools were organized. Three national in-service education centres were started later and summer institutes also began functioning. A study of these aspects was made by the researcher and is presented in this chapter.

A. Pilot Schools

The establishment of the 105 pilot elementary schools in the country in the year 1959, marks a significant event in the in service education programmes in the Philippines. As most of these schools were identified with the barrios, the main purpose of the activity was to improve rural education. The objectives of the pilot schools in relation to the elementary education improvement sub project were enumerated as under :

"(a To upgrade elementary education in the country through—
  (1) the establishment of regional pilot demonstration centres and division pilot demonstration schools and the provision of improved teaching and learning opportunities for teachers and pupils.
  (2) the extension to these centres and schools of technical assistance and financial aid in the form of instructional materials and aids.

(b) To improve supervisory, instructional and administrative practices at all levels (local, provincial and national) through an improved and effective in service education programme.

(c) To assist administrators, supervisors and teachers in upgrading their leadership and teaching competencies in the community school and in their methods of evaluating their effectiveness.

(d) To assist in a coordinated effort of study the growth, needs, characteristics and development of the Filipino child.

(e) To foster closer community cooperation and relationship and assist in providing better socio economic opportunities for the community.

(f) To develop better communication techniques in and between pilot schools and between them and other schools in their service areas including the exchange

> of appropriate audio visual aids and other instructional materials prepared locally or developed in the regional materials production centres."[1]

Regarding the administration and supervision of the schools, it was laid down that "the division superintendent of schools is the head of the project in the division with the academic supervisor as provincial project executive. A divisional advisory committee, composed of the superintendent as chairman and the academic supervisor, other divisional supervisors, district supervisors of the schools involved, and lay leaders as the members, advises and decides on the ways and means of implementing the action programme of the schools concerned, copies of which are to be furnished to the project staff in the Instruction Division. In addition, the committee assists the pilot demonstration centres in organizing activities, planning programmes, making surveys etc. An elementary school advisory committee, with the district supervisor of the pilot school as chairman, performs duties similar to those of the division advisory committee. The members of this committee are the principal, the chairman of the teaching staff, the P. T. A. president and another lay leader.

In regard to the responsibility of the field, it is the intention to give more leadership responsibility to the principal of the pilot school than has been given him heretofore, particularly in matters of administration and supervision of the school. The district supervisor will generally serve in an advisory capacity or as a liaison between the division office and the principal's office. The division supervisors will provide consultant services to the principals and teachers of the pilot schools, in addition to their role in providing a favourable climate for the development of the leadership potentials of classroom teachers and even lay men."[2]

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1. Bureau of Public Schools—Memorandum No. 55, s. 1960, dated June, 1960, p. 1.

2. *Ibid.*, p. 1—2.

The pilot schools were provided three fold assistance to run the schools efficiently, viz., :

(a) **Commodity Assistance.**—This came from two sources—

(1) Peso contribution– to meet the operational expenses, equipment and buildings, etc.

(2) Dollar contribution—to provide equipment and materials for different subject areas like science, industrial arts, language, arts, physical education, etc.

(b) **Participant Training.**—to meet the expenses incurred by the teacher scholars sent for training to the United States.

(c) **Technical Assistance Services.**—provided by the American experts to guide and supervise the programmes.

Each pilot school in the beginning emphasized one of the major subject areas, viz., Industrial Arts, Language Arts, Home Economics and Science. But later on many of the schools at the division and other levels started work for the improvement of the total programme in the schools. There are many pilot schools still emphasizing one of the above aspects although working with the improvement of the whole curriculum in the schools.

Technical assistance was provided and participant training in the following areas was granted :

Child growth and development.
Supervision of elementry education—science.
Supervision of elementary education—guidance.
Administration and supervision of general elementary education.
Educational research.
Development of curriculum materials.
Teaching English as a second language.

Supervision of teaching of science in elementary grades.

Leadership in administration and supervision of elementary education.

Psychology of elementary school subjects and exceptional child.

Leadership training in administration and supervision of home economics.

Child study and development.

Leadership training in organization and supervision of industrial arts.

Administration and supervision of the schools.

Supervision of science education.

Guidance and counselling.

Coordination of state colleges.

Natural science.

Textbook illustrations.

Teaching English as a second language.

The pilot schools assumed special significance in 1963 when the B. P. S. AID regional in-service education schools were started. These schools are being used now as demonstration centres and the services of the teachers in these schools are utilized as resource personnel in the programmes of in-service education at the divisional and the regional levels.

The general office issues a bi-monthly newsletter to report the significant efforts of these schools as also to include useful articles from the administrators and educationists for the use of the schools in the country.

These schools play an important role in demonstrating good practices to the neighbouring schools and the community members. One of the pilot schools visited by the investigator is concentrating on the 'health education' programme. An interview with the teachers of this pilot school revealed that the teachers of the nearby schools gather for their in-service education programmes on 'health education, in this school and also arrange group visits to see the ways and means adopted to improve the health of students in the area. It was also reported that this programme helped the local community a lot in improving health practices. The school has a dispensary, duly equipped with clinic.

A pilot school in the Philippines is an independent unit for the purpose of planning and implementing,its programmes. It has an advisory committee, consisting of the supervisors, community members, teachers and the specialists concerned, to help in planning, implementing and evaluating the programmes.

B. Normal Schools as Agencies of In-Service Education

The role of the teacher training institutions in providing in service education need hardly be emphasized. They are suitable agencies not only by virtue of their having a responsibility to continue with what they teach in their pre-service education programme and because of their having rich human and material reasources, but also because the provision of such services to teachers in the field helps these schools to improve their own pre-service programmes. An attempt was made to find out the role of the normal schools in this respect in the Philippines. The trips to the north and the south of the country provided opportunities to make such a study.

The role of the normal schools in this respect may be discussed in terms of the two types of services they offer, viz.

1. Non-credit services, which may be called as extension services.
2. Credit courses, which count for the improvement of educational qualifications.

1. Extension Services.—The study revealed that the normal schools at Iloilo, Cebu, Bukidnon, Laoag and Bayambang are extending their influence and resources to the schools in the neighbourhood in a variety of ways, though this does not come to them as their formal duty. Below are given some of the ways they adopt to assist the schools:

(a) Whenever the teacher educators are invited by the nearby schools to speak or act as resource persons, they are permitted to go.

(b) Whenever the training institution organizes training courses for teachers of the laboratory schools, teachers from the adjoining schools are allowed to join if they so desire. In some of the institutions the days and timings are fixed for such purposes and notified to the teachers of the nearby schools, for example at Cebu, the meetings are held every Tuesday, Thursday and Saturday from 4.00 p.m. to 5.30 p.m.

(c) Contacts with the schools are maintained through the conduct of research studies. The normal schools have child study centres, which are supposed to be staffed by a child study technician, an educational researcher, an educational statiscian, a psychologist and a physician. Each of these staff members are expected to have only two loads of teaching in the pre-service education programme, amounting to 6 hours work instead of 15 hours. This would provide them an opportunity to keep in touch with the actual conditions in the field.

(d) During the period of practice teaching, the supervisors of student teaching organize a number of seminars and meetings for the teachers of the co-operating schools to discuss different aspects of student teaching. This helps in the in-service growth of the teachers.

(e) The services of the normal school library are allowed to be utilized by the teachers, as that of the science and mathematics centres and other audio-visual apparatus.

(f) The normal schools provide necessary assistance for the organization of inee -servicdcation courses at the regional and divisional levels. Some of the services generally provided by these institutions in different fields can be enumerated as given below :

(1) Audio-Visual Extension Services—

(a) Helped different schools utilize films, slides, filmstrips and recordings and other audio visual equipment available in the normal school.

(b) Provided assistance in division and district seminars and workshops in utilizing such visual aids as significant films and filmstrips, etc.

(c) Gave demonstrations on the effective production and utilization of inexpensive materials for instruction.

(d) Arranged for audio-visual intstructors to serve as resource persons or consultants in different workshops and seminars in the division.

(2) Community School Extension Service—

(a) Held demonstrations on various phases of economics, and healthful and aesthetic living, such as :

(i) preparing food.
(ii) using fertilizers in crops.
(iii) handicrafts.
(iv) remodelling old dresses.
(v) arranging flowers.
(vi) distributing seeds of palay, seedlings of citrus and ornamental plants.
(vii) framing pictures.

(b) Waged campaigns for sanitary living, such as construction of toilets, compost pits, blind drainage, etc.

(c) Participated in civic affairs such as women's clubs, scouting, garden clubs, junior purok organizations, etc.

(d) Waged food production campaigns.

(e) Extended specific services to families such as improving crops, improving breed of animals, marcotting trees, etc.

(f) Conducted literacy and adult education classes in several rural communities.

(3) English as a Second Language Extension Service—

(a) Conducted in-service training on pronunciation and pattern drills and controlled writing activities.

(b) Held demonstrations on techniques of teaching English as a second language.

(4) Science Extension Services—

(a) Prepared science source materials.

(b) Made available services of science teachers as resource persons in seminars and workshops.

(c) Participated in science fairs and exhibits.

(d) Held demonstrations on the preparation of science equipment from local materials.

(e) Held lectures and demonstrations on the proper utilization of scientific knowledge for the improvement of economic production and of health.

(5) Library Extension Service and Curriculum Laboratory—

(a) Lent books, newspapers, magazines and other printed materials to teachers, school officials and laymen, distributed materials that can be shared including books donated by private agencies.

(b) Made available picture files and 'Filipiniana' of the school for reference by teachers, school officials and laymen in the region.

(c) Conducted in-service training activities for librarians.

(d) Sponsored poster-making and slogan and essay contests during Book-Week and participated in or initiated a community celebration or observance.

(e) Provided services of librarians as consultants and resource persons during seminars and workshops.

(f) Conducted radio programs during Book Week in places where radio stations were available.

(g) Made available services of librarians who helped in cataloguing and classifying books.

(h) Made available services of curriculum coordinator as consultants or resource persons.

2. **Credit Courses.**—The credit courses provided by the normal schools, come under the formal type of in-service activities as these constitute an organized programme with budgetary provisions. The courses offered are the same as those for the degrees of B. S. E. Ed. and M. Ed. and so the participants gain credits for completing these courses. The credits can be gained by any or all of the following three ways, namely, by attending :

(a) Evening classes,
(b) Week-end classes, and
(c) Summer classes,

While week-end classes and summer classes are held in all the normal schools, evening classes are provided only in Laoag, Bayambang, Cebu and Iloilo. The Baguio Vacation Institution provides only summer courses.

In accordance with the B. P. S. Circular No. 17, s. 1960, the maximum study load in such courses is nine (9) units for undergraduate courses and six (6) units for graduate course, leading to the Master of Arts in Education degree. There are 163 units to be earned for the degree of B. S. E. Ed. and 36 units for the Master's degree.

For the Master's degree course, one has to write a thesis, besides taking the foundation courses and a major area of study, which is known as the field of concentration. The different study areas offered in this respect are :

1. Educational Administration.
2. Educational Supervision.

3. Guidance.
4. Physical Education.
5. Teaching English as a Second Languag
6. Child Development.

Certificates of proficiency are awarded to students who have successfully completed the required number of units for each field of concentration.

The staff employed to teach during the vacations in the summer classes is given extra remuneration of 75% of their monthly salary.

The participants are required to pay tuition fees. Each superintendent is, however, requested to select and recommend at least two school officials in his area and send them for special courses like Educational Administration and Supervision. The travelling expenses of these officials are met from the travel allotment of the respective division.[1]

The investigator has found that these credit courses offer the best incentives to teachers in the Philippines for their in-service growth.

C. Baguio Vacation Normal School.

The credit courses as provided by the normal schools, are also offered in the Baguio Vacation Normal School. The investigator had the opportunity to see the arrangements there for the stay of about 600 participants during his trip to Baguio.

Though the courses and conditions for admission to this institute are the same as those of the normal schools, the idea of locating such an institute at a hill station provides temptations for teachers and administrators to go in for in-service education and professional and academic growth. In fact it provides the teachers an opportunity to have a good holiday and also to get course credits.

The establishment of such an institute may be very expensive because the residential facilities for 600 participants are used only fo. 2 out of 12 months in the year for this purpose. But it was found during an interview with the staff of the Bureau of Public Schools that some other national seminars are also held there on other days. It will, however, be befitting if one of the public normal schools is located in Baguio and the building is used throughout the year.

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[1] B. P. S. Memo No. 3, s. 1967, dated 16th January, 1967.

It is also suggested that such institutions should be located at some more places in the south such as Davao and Zamboanga. This will provide an opportunity to the teachers to visit other parts of the country which in itself will be a good opportunity for learning about the country.

D. Holding of the Yearly National Conferences.

Another significant feature of the in service education programmes in the country is the holding of national conferences for the improvement of teacher education. In the eight such conferences organized so far, the following themes have been taken up :

1. Desirable Teacher Education Curriculum in the Philippines.
2. Strengthening the Leadership Role of Teacher Education for Better Living.
3. Further Vitalizing Teacher Education for Better Living.
4. Upgrading Instructional Practice in Teacher Education Institutes.
5. Defining the Assessment Instruments and Record Forms being used in Public Teacher Education Institutions.
6. A Review of the Progress of the Long-Range Programmes for Teacher Education.
7. A re-examination of the Student-Teaching Programme of the Teacher Education Institutes under the Bureau of Public Schools.
8. Improving Graduate Education in the Government Teacher Education Institutions.

The last of the above conferences was attended by the investigator. It is suggested that one of such conferences in future should discuss the 'Role of Normal Schools in providing in-Service education to elementary school teachers to further vitalize these programmes, especially the extension programmes of the normal schools.

Among the significant features noted during the conference was its planning. Each normal school was asked well in advance to prepare a paper on a particular topic to initiate discussion. The papers presented were the result of group discussions in the respective normal schools. Educationists from the private training institutions were also invited. The programmes were evaluated daily by the evaluation committee in a specially organized meeting. An evaluation sheet was also distributed to the participants on the last day of the conference. The conference was attended by two types of educators—regular participants and observers.

E. Materials Production Centres-

Another organization which has very much affected the programmes of in-service education is the establishment of 'Materials Production Centres' at Bayambang, Cebu City and Zamboanga City.

The Centres have been provided with modern equipment and technical staff, meeting the regional needs for text-books, guides and other materials for teachers and students in the area.

They get their materials from the field schools, the regional in-service education centres and the Bureau of Public Schools.

Before the starting of the regional in-service education centres in 1963, these centres were used as national in-service education centres.

CHAPTER VII

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

The study was carried out to investigate the organization of programmes of in-service education for elementary school teachers in the Philippines and to find out its implications for India. The study used the research procedures of documentary analysis, questionnaire, interview and attendance at conferences to obtain the necessary data. One institution each was studied at the national, regional, divisional and local levels besides a study of the working of pilot schools, of normal schools as agencies of in-service education, of Baguio Vacation Normal School, of national conferences and of the Materials Production Centres.

A summary of the conclusions and recommendations is given below :

1. In service education for elementary school teachers in the Philippines is being organized on a part-time as well as a full time basis, through the supervisory staff as well as the training institutions, in the form of credit courses as well as non-credit coures.
2. At the supervisory level, where the major responsibility for in-service training lies, specially in terms of non-credit courses and other such activities, the organization is programmed at four levels namely, national, regional, divisional and local. But the major responsibility has been located at the national level in regard to the planning and organization of these programmes. The regional level needs to be strengthened to provide adequate leadership to the region.
3. The national objectives for in-service education have been laid down by the Bureau of Public

Schools but there is need to revise them and to publicize them at the divisional and local levels. There is also need to evolve objectives for the different levels to make clear the goals of the programmes to be implemented at these levels.

4. There is too much of centralization of these programmes and there is little co ordination with the local level which results in the smothering of individual initiative.

5. The curriculum of the in-service training programmes undertaken at the regional level is the same in all regions. Echo-conferences are expected to be held at the lower levels. There is need to encourage a variety in the programmes in order to cater to different regional needs.

6. No physical facilities have been provided at the divisional and the local levels for the organization of these programmes. At the regional level, special grants have been provided for the purpose. Necessary grants should also be provided at the other two levels.

7. There is no full-time staff for in-service education at any of the four levels. The provision of full-time staff at the regional level should be given top priority and immediate attention. At least one full-time worker should be appointed at the divisional level also to help in the co-ordination, implementation and evaluation of the programmes at that level.

8. The programmes are always held on working days at these four levels. The possibility should be explored of organizing week-end programmes as well. Credit courses are organized in the evenings, during week-ends and during the summer in the normal schools.

9. A variety of methods of in service education including seminars, workshops, symposia, lectures, etc. are employed. There is, however, a need to give training in the proper choice and use of these methods to the organizers of these programmes at the different levels.

10. The number of paricipants varies from 5 to 100. Generally, the participants include all categories of workers, namely, teachers, principals, supervisors. etc.

11. The service area as served by the institutions at different levels is not considered large at any level. More human facilities have however, been demanded at all the levels.

12. The programmes are generally planned at the beginning of the year and are mostly followed through.

13. The programmes are mostly held at the regional centres or divisional offices, but at the local level, the venue is changed from school to school.

14. The participants are informed of the programmes well in time and when any one of them expresses his inability to attend, the next person on the waiting list is invited.

5. The issue of a newsletter is one of the significant practices during the organization of the programmes.

16. Follow up work is not done regularly, and so it needs to be regularized at all the levels.

17. The undertaking of research is considered an important activity of in-service education programmes at all the levels; but not much has been done in this direction. Adequate orientation for under

taking action research needs to be provided to the teachers.

18. The organization of in-service education programmes has helped in the vitalization of two other areas, namely, the supervisory practices and school community relations.

19. The supervision of in-service training programmes is generally a responsibility of the general supervising services. Supervision is conducted through visits and post-programme conferences.

20. The issue of certificates of attendance is an important incentive at all the four levels; and so is the credit towards higher degrees that is provided for attending week-end, evening and summer classes.

21. No financial provision has been made for any of these programmes at the divisional and local levels. The need to allocate some funds for the purpose is generally felt.

22. There are no other agencies besides the above, working for the in-service education of elementary school teachers.

23. Insufficiency of funds and inadequate administrative support are the main drawbacks in the organisation of programmes for in-service education.

24. Most of the respondents described the programmes as 'successful.'

25. The pilot schools are playing significant role as demonstration centres in the in-service education programmes at the local level.

26. The services of the normal schools are not being sufficiently utilized for organizing in-service

training programmes at the different levels. The main contribution of these institutions is the provision of credit courses.

27. More vacation institutes on the pattern of the Baguio Vacation Normal School, should be established during the summer vacation at places having an inviting climate.

CHAPTER VIII

IMPLICATIONS OF THE STUDY FOR INDIA

The implications of this study for India are derived from the following sources :

1. The strong points in the organization of in-service education programmes in the Philippines.

2. The inadequacies and weaknesses in the organization of these programmes in the Philippines, as reported by the respondents in order to draw lessons from their mistakes for the organization of such programmes in India.

3. A study of the background of the conditions prevalent in India as regards the existing programmes for in-service education of the elementary school teachers, to capitalize on the gains of the existing programmes and the momentum already gained.

A glimpse at the development of the in-service education programmes in India and their present status is, therefore, necessary, before discussing the implication of this study for India.

A. Development of the In-Service Education Programmes for teachers in India.

The history of in-service education programmes for teachers in India can be traced back to the vedic period and to the 6th and 7th centuries A. D., when the Taxila and Ujjain universities were at their glorious peak. Teachers from different parts of the country used to meet in the 'Goshties' and the 'Vad-Vivads', (which are the sanskrit terms for seminars and discussions respectively)in order to exchange their experiences. In modern times, however, in service education for teachers owes its origin to the recommendation of the Central Advisory Board of Education in 1944, wherein it was realized that refresher courses for teachers should be organized to keep them up-to-date. In 1945, the Sargent Report reiterated the need. The report of the University Education Commission in 1949 proposed the utilization of vacations to occupy the teachers in getting more experiences. The Secondary Education Commission of 1952, however, put forth proposals to organize such programmes, which got a definite shape in the first National Seminar held at Hyderabad in 1954 and in the second such seminar held at Srinagar in 1955.

A beginning was made with the in-service education of secondary teachers in 1955 with the organization of 23 Extension Services Departments attached to different training colleges under the auspices of the newly founded central body, known as the 'All India Council for Secondary Education,' now superseded by the Department of Field Services at the National Council of Educational Research and Training. The number of such centres has risen gradually until at present there are about 100 centres at secondary level. Encouraged by the success of these programmes and their visible impact on schools, the first 'National Seminar on the Education of Primary Teachers in India' in 1960, recommended the opening of extension services centres for primary schools. Accordingly 30 centres were opened in 1962 and fifteen more were added in 1965. The responsibility of guiding these programmes at the central level was entrusted to the National Institute of Basic Education, one of the constitutent departments of the National Council of Educational Research and Training. Another important step in this direction has been the establishment in 1964 of State Institutes of Education in the sixteen states, charged with the main responsibility of improving elementary education, by providing in service education programmes for supervisors of primary schools and teacher educators in primary teacher training institutions.

B. Present Status of IIn Service Education Programmes for Elementary School Teachers in India.

As stated earlier, there are 45 centres at present operating for the benefit of elementary school teachers. The project is known as the 'Extension Services Project for Primary School Improvement'. The task has been entrusted to the teacher training institutions, which are to extend their influence to the surrounding schools—which explains why the ptoject is called an 'Extension Services Project.' The project has two major objectives, namely, improving elementary schools through the in-service growth of teachers and the vitalization of the pre-service teacher training programme by providing teacher educators an opportunity to be in touch with the actual conditions in the schools.

The training institutions to which the centres have been attached are provided with a special post of extension educator, known as the co-ordinator, by virtue of his responsibility for co-ordinating the planning, implementation and follow-up of the programmes with the staff members of the training institution, respective supervisors and the community. Clerical assistance is provided to the co ordinators to

Each centre is provided with a non-recurring grant of Rs. 7,500 (about 4,000 pesos) to purchase necessary material like furniture, library books, audio-visual material, duplicator, type-writer, etc. The training institution provides the use of its buildings and equipment in addition to its human resources. Besides this, an annual grant of Rs. 20,000 (about 10,000 poses) is provided for the salary of the staff, grants- in aid to co operating schools, travelling and daily expenses of the teachers and contingencies etc.

Each extension centre selects 50 elementary schools in neighbourhood within a radius of ten miles. The schools are known as co-operating schools. Each centre has an advisory body consisting of the training school staff, the supervisors, head teachers, teachers and public men. The advisory committee meets frequently to plan and evaluate the programmes.

The programmes of the centres cover a variety of techniques like the holding of seminars, conferences and workshops, visits of the staff of the training schools to the cooperating schools, publications, research etc. The programmes include both long term and short-term courses.

The field staff of the National Institute of Education has the responsibility for supervising these institutions. They do so by visiting the centres, organizing state and national conferences, sending materials, issuing a quarterly newsletter and providing regular guidance. This institute also organizes leadership courses on such vital topics as audio-visual education, single teacher schools, experimental projects, school community relations, etc. An initial training of two to three weeks is provided by this Institute by holding a special training course for all the new coordinators. The State Institutes in the respective states are also expected to provide academic guidance to these centres.

C. Implications for India

As can be seen from the existing in service education programmes in India, only a fringe of the problem has been touched so far. Of the four lakhs[1] of elementary schools, only 2, 250 are bing offered facilities for in service education at present. The problem requires immediate attention from another point of view that a large percentage of the teachers in the primary and middle schools are still untrained, the figures for 1960-61 being 39.4%. and 32.7%[2] for primary and middle schools respectively. The estimated percentage of untrained teachers in 1965-66 was 22·11% in psimary schools and 25% in middle schools.[3] The report of the Education Commission, 1964-66 rightly diagnosed that, "Very little is being done for the in-service education of primary teachers. This programme needs great emphasis."[4] The report also says: "Apart from what the schools and other agencies can do, there is need for the organization of a large scale, systematic and coordinated programme of in-service education, so that every teacher would be able to receive at least two or three months of in-service education in every five years of service."[5] With this pious hope of universalizing the much needed provision of in-service education for elementary school teachers in India, as envisioned by an august body like the Education Commission, an outline is presented below of a suggested programme for India in the light of the first hand experiences gained from the present study.

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[1] Elementary Teacher Education.Report 1963-65, *op. cit.*, p. 191.

[2] *Ibd*., p. 146

No appreciable extension of the existing facilities for in-service education in India will be possible because of the heavy financial involvement it will entail. The provision of about 20,000 rupees to each training college, with increased expenditure on the central or state supervising agencies seems only a theoretical proposal in view of the various other priorities in education. The establishment of the present 45 centres on an experimental basis, is expected to provide ideas for working with primary school teachers which can be utilized by the different agencies concerned with the in-service education of these teachers. Even if such a provision is made for all the 1,500 elementary teacher training institutions in India, that will not cover all the elementary school teachers because of the present location of the training institutions. Programmes of in service education should, therefore, provide a variety of means, keeping in view the above factors.

The investigator recommendes that such programmes should have the following facets :

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[3] *Ibid.*, p. 146

[4] op. cit., p. 85.

[5] *Ibid.*, p. 84

(a) Part time Courses including evening classes, week-end classes and summer classes.

(b) Credit courses leading to the attainment of higher degrees or certificates of efficiency in particular fields.

(c) Non credit courses, to be organised by
   (i) training institutions for teachers working in schools in the immediate vicinity;
   (ii) supervisors in their respective areas;
   (iii) teacher organizations and other agencies.

(d) Correspondence courses.

(e) Pilot Schools.

(f) National and State conferences on elementary education.

(g) Concessions to teachers to improve their qualifications without attending courses, as private candidates.

(h) Full-time courses leading to improvement in qualifications.

All these facets will be discussed under the following roles, to be played by different agencies :

1. Role of the Supervisory Services.
2. Role of the Teacher Training Institutions.
3. Role of the State Institutes of Education.
4. Role of the Universities.
5. Role of State Department of Education.
6. Role of the Ministry of Education.
7. Role of the National Council of Educational Research and Training.
8. Role of Other Agencies.

I. Role of the Supervisory Services

The entrusting of responsibility for the in-service education of teachers to the supervisors will be most effective because of the following reasons :

(i) It is actually the job of the supervisors in the modern sense to see that the teachers are growing on their jobs.

(ii) The supervisors in India have both the supervisory and administrative duties and so their word will always carry a heavier weight with the teachers as compared with that of other agents or organisations.

(iii) This will help in universalizing the provision of in service education for teachers.

(iv) The programmes will be based on the real needs of the schools because the supervisors are in a position to know them well.

(v) There will be comparatively less of bottlenecks in their functioning as promoters of in-service education programmes.

(vi) This will improve the supervisory practices because it will provide a better insight to the supervisor into the problems and difficulties of the schools.

This may, however, have the danger of this programme being neglected because of the supervisor's pre-occupation with other duties and his heavy administrative load. So care must be taken to avoid such neglect. To implement this, the pattern followed in the Philipines may be accepted with suitable changes, as given below :

1. Local level—responsibility of the bloc education officer.
2. District level—responsibility .of the district education officer.
3. Divisional level—responsibility of the division education officer.
4. State level—responsibility of the State Institute of Education.

5. National level—responsibility of the National Council of Educational Research and Training.

The National Council will have only advisory and suggestive functions, leaving the initiative with the State Institutes of Education which will organize courses to prepare the field personnel for the job. Working groups should be formed in each state or at the national level to discuss the broad features and the important aspects of the scheme as suggested below :

1. What should be included in the training of supervisors for this job at the different levels ?
2. What material and personnel facilities need to be provided at the different levels to make the pro gramme effective ?
3. What should be the supervisory pattern for these programmes ?
4. How should the programmes be evaluated ?
5. What steps should be taken to popularize the programmes with teachers and community members ?
6. How should the programmes be coordinated at the different levels and with other agencies like training institutions, teacher organizations, etc. ?

This programme will cover only the non credit and part time activities.

II. Role of Teacher Training Institutions

The training institutions will provide both non credit in-Service training programmes and credit courses leading to the improvement of educational qualifications. The former may be called informal or extension services. They should also assist the supervisors in their programmes. These programmes are discussed below.

(a) Non-Credit Services. Each training school should have the responsibility for developing some schools in its neighbourhood and they must include the cooperating schools where practice teaching is held. This contact of the training college with the schools will help it, as a by-product, to vitalize its own pre-service training programmes. This will also make extension a part of the job of training college. It should not require much financial allocation. One of the staff members, and preferably one of the seniormost, should be designated as the coordinator and given comparatively less teaching load in lieu of his extension duties. He should also look after the practice teaching and seek the cooperation of his colleagues on suitable occasions. The training institute can discharge these functions in many ways, some of which are given below :

1. By permitting the teacher-educators to act as resource persons, whenever the cooperating schools require their services in their local programmes.
2. By inviting teachers for seminars and workshops to discuss matters of common interest to them as well as to teachers of the demonstration schools.
3. By orienting teachers with the latest trends in education during the practice teaching period.
4. By allowing teachers to use the resources of the training institution like the library and the audio-visual equipment and materials.
5. By meeting the alumni from time to time to discuss their problems in the field.
6. By keeping contact with the alumni through a quarterly or a half yearly journal.
7. By arranging demonstration lessons on modern techniques of teaching.
8. By inviting teachers to some of the important functions of the institution like the annual day or the foundation day.
9. By organizing exhibitions of charts and models, etc. prepared by the students.

10. By organizing book exhibitions.
11. By arranging discussions on the significant and common problems of the schools.

The National Council of Educational Research and Training or the State Institutes should hold workshops to recommend a workable scheme of built-in extension services, their programmes, the number of the schools to cooperate with a training institute, the nature of the activities and the necessary physical and material facilities, which should be provided. Ad hoc grants should be provided to the older institutions to buy the necessary materials. For the new training institutions, such provision should be made along with the initial grants.

(b) **Credit Courses.** Credit courses provide one of the most effective incentives to teachers and, therefore, such a scheme should be launched in India as early as possible. Credit courses for elementary school teachers in India may be provided for the following qualifications :

1. Basic Training Certificate for untrained teachers.
2. Matric (Basic) Diploma for trained teachers with the middle school or junior Basic school certificate. (More of the content courses may be provided here).
3. Intermediate Teacher's Diploma for Matric trained teachers. This will be equivalent to the old J. A. V. or S. A. V. courses and this will be an important step towards raising the qualifications of the teachers of elementary schools.

The elementary teacher training institutions with their present status may not be able to organize courses beyond these levels. But the Post-Graduate Training Colleges and/or universities may organize higher courses for :

1. The B. Ed. degree—for Matric Trained, Intermediate Trained and B. A. degree holders with Junior Basic Training.

2. The M.Ed. degree—for B. Ed. degree holders.

The State Institutes of Education will, of course, be the most suitable agency to organize M Ed. courses or the universities should take up the work.

These courses can be organized in three ways, i.e., by holding :

1. Evening classes.
2. Week-end classes.
3. Summer classes.

A committee should be appointed at the national level to study the possibility of organizing such courses for different certificates and degrees in different states.

The investigator has the following suggestions in this respect :

1. The courses should be started only in a few selected training institutions in the beginning.
2. The courses for untrained teachers as mentioned above should be given top priority to clear the backlog of untrained teachers.
3. Fees should be charged from the trainees to meet expenses of the scheme.
4. Based on some of the urgent needs of the primary schools, some courses like guidance, physical education, modern mathematics, etc., should be identified and they should form a part of the curriculum of higher courses. Certificates of efficiency should be provided after the completion of the required course in the area.
5. The syllabi and the training programmes of the training colleges of Thailand should be studied to see how teachers starting with the certificate of education can gain the diploma and the degree in education. This will provide a good background

for evolving a course for the Intermediate teachers' Diploma, as suggested above.

6. The staff employed to teach these courses should be given extra remuneration.
7. Provision should also be made for holding such classes in the hilly areas in their respective states to attract a larger number of teachers from these areas. There are summer homes for teachers at several hill stations in India. If accomodation is provided for the necessary offices and classrooms for holding these courses, summer institutions can be organized in these hill stations.
8. No permanent staff need be appointed. It should be on the pattern of the Baguio Vacation Institute. Lecturers from the regular training institutions should be drawn to teach during summer vacation on additional remuneration of 75% of their monthly salaries.
9. Sufficient publicity should be given to the programmes to attract more teachers.
10. Instead of making the programmes free, other incentives should be offered in the shape of increments and promotions to teachers in order to induce them to attend these programmes.

(c) Assistance by Training Institutions to In-Service Education Programmes Organized by the Suppervisory Staff.

At all levels of in-service education activities organized by the supervisory staff, from the local to the state, the staffs of the training institutions in the area should provide the necessary assistance. Members of these staffs should be occasionally called in for the planning, implementation and evaluation of these programmes. Besides the human resources, the physical resources of the training institutions can also be **utilized**, specially at the local level. At this level, the supervisor can sometimes organize his programmes in the training college, if there is any in the area.

III. Role of the State Institutes of Education.

Inasmuch as they constitute the improvement wings of the education departments, the state institutes of education occupy a strategic position in developing in-service training programmes in the states. Again, because of their being the coordinating agency between the supervisors and the training institutions for the improvement of teacher education, they occupy a pivotal poition in developing in-service education programmes. They can not only influence programmes organized by the above two agencies; but theycan also work vitally for the coordination of the programmes. In fact, the state institutes of education can provide leadership in the planning of these programmes according to the regional needs of the schools, and they can supervise and guide these programmes accordingly.

Besides the above responsibilities, the state institutes are also best fitted to organize correspondence courses for elementary teachers. The institutes may issue their own certificates or degrees or prepare teachers for the higher examinations of the university or universities in the state. They should also organise summer courses or assume responsibility for coordinating and supervising the organization of such courses. Again, the state institutes should provide frequent opportunities to the different agencies of in-service education like teachers' organizations and the community to meet to plan the coordination of all their activities.

Giving due share and importance to the significant in-service education activities of these organizations in the institute's publications will also be very useful for the development of these programmes.

IV. Role of the Universities

Because of the low academic and professional qualifications of primary school teachers, the universities can play a very significant role in upgrading them. The average primary school teacher has only eight or ten years of schooling with one or two years of professional education. Some of the universities provide special facilities to teachers to appear in their examinations privately without attending regular classes. This not only helps teachers in service to broaden their vision but it also tempts the new entrants to join the profession so as to get better qualified, a facility which may not be availed of in other services. All the universities, therefore, should make this provision for teachers.

Though most of the universities give this concession to teachers to appear for their examinations privately, they do not allow them, in most cases, to get professional degrees like the B. Ed. or the M. Ed. However, the Panjab University allows teachers with junior training and the B. A. degree to appear for the B.T., but as the B.T. course is being converted into the B. Ed. this facility will automatically be withdrawn. Keeping in view the incentive that such a facility provides, the universities should consider permitting teachers to appear for their professional examinations.

The Dharwar University awards the M. Ed. degree to those who attend 2 vacation courses. The Jodhpur University has also started admitting students during vacation courses for the B. Ed. degree. This is a very appreciable move and other universities should follow the lead. The best thing will be to combine the two practices mentioned above, i. e., permission should be given to teachers to appear for higher examinations after they have attended at least one training course. Such measures will help even those who are not very much interested in professional growth to continue further studies.

Another important role that the universities can play is to start correspondence courses for teachers not only in the professional field but also for the Bachelor of Arts degree. Preference should be given to teachers to enrol in these courses. An appropriate step in this connection would be to include 'education', as one of the elective subjects in the curriculum for the B. A. degree.

Universities should also consider awarding professional degrees on the basis of concurrent studies in general education and professional education on the pattern the Kurukshetra University's four year B. Ed. course. The curricula of the University of the Philippines and those obtaining in Thailand may also be considered for chalking out such a progrrmme. Thus, teachers with a high School certificate and one or two years' training will be able to do the B. Ed. without crossing the hurdle of a bachelor's degree in arts.

Another concession that a university can give to the teachers with a middle school certificate is to allow them to appear for the matriculation examination and to give them certificates for the number of subjects in which they pass, permitting them to appear in the remaining subjects subsequently. Such a practice has a precedent in the pattern of of the General Certificate of Education in the U. K.

V. Role of the State Departments of Education

As education is the responsibility of the states, the state departments of education hold key positions in developing programmes of in-service education for elementary school teachers. The suggested programme in this report can be implemented, if necessary funds are sanctioned for the purpose. But aside from that and the moral support to the state institute of education, each department should take the following steps to make its programmes effective :

(a) **Pilot Schools.** Pilot schools can play a very imporant parte in the in-service education of teachers as noticd in the Philippines. They serve as demonstration schools and as it has been said, an ounce of practice is better than a ton of theory, one demonstration of good technique of teaching can affect the observers' efficiency much more than a week's seminar involving verbal discussions. In fact, the two must go side by side to bridge the gulf between theory and practice. The Ministry of Education, Government of India, had a plan some time back, to start model schools, one in each district. The Education Commission 1964-66, has also recommended that "the highest priority in the programme should be given to the creation of a minimum proportion of 'quality' schools at every stage, which would serve as pace-setting institutions. The number of really good schools in the present system is pitifully small, and in order to obtain good results in the shortest time, it is necessary to concentrate available resources in a few centres, As a first step towards improving all schools, therefore. we should, strive to improve, during the next ten years, at least ten percent of the schools at the primary stage to an optimum, level. "6

The State departments should,therefore, take the initiative in identifying such schools and meeting their financial and other needs. It will be most encouraging if the Commission's proposal to make ten per cent of the school 'quality schools' is implemented, but the investigator is of the view that a humble start should be made in deciding the number because the quantity may affect the quality, making such schools 'quality schools' only in name. It is, therefore, suggested that only two per cent of the schools may be identified as 'pilot schools.' This is suggested keeping in view the role of these schools in the total in-service education programme and assuming that each block education officer or elementary supervisor is concerned with fifty schools. Each block education officer will, thus, have only one pilot school in his area and this will help him in organizing in-service education programmes for teachers. Following the example of the Philippines, the author suggests that the office of the super-

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6 *Op. cit.*, pp. 259-260.

visor should preferably be located on the campus of this school so that the teachers who come to see him may see some of the good practices in the school and gain something, as a by product of their visit to the supervisor. Such a school should preferably be located in the central portion of the block to make it convenient for teachers to approach it.

The short report on the 'pilot schools' in the Philippines given in the preceding pages shows the three-fold nature of the assistance provided to the schools in the form of commodity assistance, participant training and technical assistance. All these aspects must be attended to in right earnest. The author suggests that one such school in a district should be established with full physical amenities and human resources rather than one in each block, if the resources do not allow and the required equipment of the district school is going to be affected.

A special committee should be constituted to suggest the measures for equipping the 'pilot schools' materially, the procedures for manning them and for providing further training to teachers on a continuous basis, and for determining the role of these schools and their aims and objectives, etc.

The Commission has further observed in this connection that "the basic approach so far in the programmes of qualitative improvement has been to stress the provision of physical facilities rather than the operation of the human factor. It will be seen that the object of the nation wide programme of qualitative improvement proposed here is to reverse the process and to stress the contribution which the combined efforts of teachers, supervisors, parents and students themselves can make to the qualitative improvement of education." The investigator cautions here very humbly that the policy of the golden mean be followed. From his experience of visiting the 'pilot schools' in the Philippines, he is of the view that the physical amenities available in such a school play as important a role as that of improved school personnel or the co-operation received from different agencies.

The 'pilot schools' as suggested above, will develop and demonstrate the total school programme. But if the available funds allow the upgrading of more than two per cent of the schools, the investigator will suggest that each block should be given a grant to be used in two to six other schools to work on one particular area of the school curriculum. These will be pilot schools for one selected area like the mother tongue or mathematics or general science or social studies, etc. If the funds are limited, it should be left to the initiative of the supervisor to decide how best they could be used.

(b) Conferences on Elementary and Teacher Education.

Taking a cue from the practice in the Philippines, the investigator suggests that the states should earmark funds to hold such conferences on important areas of elementary education and the in-service training of teachers.

The conferences may be organized in different institutions every year. The topic for each conference should be decided well in advance. Educationists from the universities and other ranks may be invited to share their views on different topics in teacher education. Some of the important themes for such conferences, as given below, may be considered :

1. Organization of Credit in-service courses in primary training institutions.
2. A re-examination of the student-teaching programme in primary training institutions.
3. Upgrading instructional practices in primary training institutions.
4. Enriching community life in primary training institutions.
5. Built-in extension activity in the primary training institutions.

VI. Role of the Ministry of Education.

Though the development of educational programmes in India is mainly the responsibility of the states, it is being realized that the centre should take more interest, especially in teacher education. According to the report of the Education Commission 1964 66, "Since teacher education is vital for improving standards in all education, the Government of India, should assume a special responsibility for improving teacher education and providing liberal funds for it. . . we recommend that substantial allocation of funds should be made for teacher education in the fourth Five Year Plan.. Such allocations will have to be increased and continued in later plans."[7]

As in-service education is a part of the teacher preparation programme, the scheme should be sponsored and financed by the Central Ministry partially, if not fully.

VII. Role of the National Council of Educational Research and Training

The N.C.E.R.T., which is the principal agency functioning at the national level with responsibility for organizing in-service education Programme for elementary teachers can, as at present, play a very important role in the development of these programmes, e.g.

1. The programes of the state institutes of education are vitally influenced by the thinking and discussion during their half yearly conferences convened by the Council. The council will, therefore, have to so popularize the idea of organizing these programmes with the state institutes. The state departments have also to be convinced of the utility and importance of these programmes.
2. The council should organize conferences at the national level to evolve the different programmes discussed in the preceding pages.
3. The council should also publish material concerning the working procedures in the in-service education programmes that have been found to be successful in the existing extension centres.

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[7] *Op. cit.* p. 87.

4. Necessary guidance should be provided to the states in the initial stages for working out their programmes.
5. Good practices in the field as reported by the different states should be given wide publicity by the council for the benefit of other states.
6. Some of the schemes as suggested in the preceding chapter should be initiated and financed by the council.
7. The council should continue working with the present extension centres on an experimental basis for the purpose of identifying better methods of working with elementary teachers through these centres.

VIII. Other Agencies.

Some of the other important agencies, which can be utilized for providing in-service education are given below :

(a) Teachers' Organizations.

The improvement of the teachers should be one of the foremost concerns of teachers' organizations. They should not only limit themselves to the demands for increased salaries and othet such privileges, but should come forward with plans to increase the efficiency of the teacher in his work. They can organize demonstrations of lessons, exhibit teaching materials and even organize other activities like the publication of a journal or the holding of a week-end conference. The state boards of education and other such boards at the lower levels should make it a point to include respresentatives of the teachers' associations in their advisory boards, This will help, on the one hand, to make the programmes more representative, thus gettng support of the teachers' organizations and, on the other hand, it will help to persuade them to plan their own programmes for the in-service growth of teachers.

(b) Radio and Televison.

All India radio and some of the radio stations in the states have already started broadcasts for children. Television Programmes in Delhi are providing special services for school including demonstration lessons by competent teachers. occasionally, the leading educationists in the country are invited to speak on important educational topics. But there is an urgent need to provide regular broadcasts for teachers. The author would suggest that the State Institute of Education in each state should organize these programmes and prepare the schedules. In the Punjab, to give an example, the last working day of the month can be best utilized for this purpose, as the teachers from the adjoining schools come to the centre meetings. Discussion may follow the talk or other activity included in the radio broad casts.

(c) Organized Travel.

The central and the state Governments should provide opportunities for concessional travel because this helps a lot to broaden the mental horizon of teachers, especially of those who are teaching the social studies. Railway concessions are already available if teachers travel in a group of a least four during the summer vacation The writer recommends that concessions should be provided even to a lone teacher provided the purpose of his travel is educational The concession should also be allowed to his family members. The red tapism in the award of these concessions should be avoided and presentation of a certificate from the head of the institution to this effect should be sufficient to help him avail of this concession.

(d) Mobile or Circulating Libraries.

These libraries will be very useful in bringing the latest information to teachers and in creating interest in reading. It is not possible to provide sufficient reading materials to all the schools These circulating libraries will, therefore, meet an urgent need of teachers. Each district should be divided into some zones for the purpose, the smallest unit being the block.

(e) Production of Educational Litereture.

One of the effective ways of helping teachers to grow is to provide good educational litereture to them. The need in India is much more for literature in the regional languages for elementary school teachers becuase their proficiency in the English language is poor and they cannot understand English books well. There is need, therefore, to prepare brochures and pamphlets containing material, both on content and teaching methodology. The state institutes in many states have already started their own publications ; but they serve more the needs of teacher-educators and supervisors. Journals need to be published for the specific use of elementary schools teachers

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CHAPTER IX

SUGGESTIONS FOR FURTHER RESEARCH

The study gave an opportunity to the investigator to identify some other related problems in the field of in-service education. These are listed below for consideration by further researchers :

1. Evolving the aims and objectives of in-service education programmes in the Philippines at the different levels, namely, national, regional, divisional and local.
2. Case studies of a few institutions of in-service education for teachers at the local level with a view to finding out the significant practices of working with teachers.
3. A comparative study of the in-service education programmes in the public and private elementray schools in the Philippines.
4. Correlation between pupil achievement and in-service education of the teachers.
5. The effectiveness of different methods of in-service education.
6. Evaluation of in-service education activities in elementary schools.
7. Factors associated with the successful operation of in service education programme.
8. Useful practices and means of identifying the needs of schools for organizing in-service education programmes for their benefit.
9. Policies, practices and trends of in-service education in the Philippines.

10. Role of teacher training institutions in in-service education of teachers.
11. Appraisal by selected teachers of pre service preparation and in-service education needs.
12. Development of guidelines for an in-service leadership training programme.
13. Role of the universities in the in-servicce education of elementary school teachers
14. The comparative effectiveness of different incentives for participation in in-service education programmes.
15. Action research as a means for in-service education.
16. A suggested programme for equipping teachers to take up action research projects in the schools.
17. The strengths and weaknesses of correspondence courses as means of in-service education.
18. The advantages and disadvantages of entrusting the responsibility of in-service education to the supervisory staff.
19. The role of the community and of teachers' organizations in providing in-service education to teachers.
20. Desired qualities in the organizers of the in service education programmes.

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QUESTIONNAIRE

ON THE ORGANIZATION OF IN-SERVICE EDUCATION PROGRAMMES FOR THE ELEMENTARY SCHOOL TEACHERS IN THE PHILIPPINES.

A. General.

1. Name of the institution : ______________________

2. At what level is the institution working to develop in service education programmes ?

   National/Regional/Divisional/District/Local

3. Year of starting in-service education activities in your institution. ________________

4. Name of the Respondent ______________________

5. Designation ______________________

6. How long have you been associated with the organization of in-service education programme ? ________

7. How long have you been associated with the present institution ? ________________

B. Objectives of In-Service Education Centres.

1. The following are the objectives of in-service education centres as provided by the Bureau vide Memo No. 52, as, 1964. To what extent, in your opinion, has the programme been succesful in the achievement of these objectives in your area ? Please express your opinion against each by tick-marking your opinion.

	I Very much	II Much	III Not much	IV Little	V Not at all
(a) To permote a well organised and carefully planned continuing in-service education programme designed to upgrade administrative, supervisory and instructional competencies of teachers, head-teachers, principals, supervisors and superintendents toward improving the various phases of school work within each service area.					
(b) To demonstrate instructional administrative and supervisory techniques and practices which have been found effective and calculated to meet local needs.					
(c) To develop for possible adoption techniques and procedures of internships or practicum in supervision and administration.					
(d) To tap all resources of assistance, division and general					

	I Very much	II Much	III Not much	IV Little	V Not at all
office personnel colleges and universities, civic organizations, teachers' Professional organizations, publishers of professional books, AID and PCV head quarters, etc.—in carrying out a continuing programme of in-service education					
(e) To stimulate the field in the preparation of the instructional, supervisory- and administrative material that may be printed in three regional materials production centres.					
(f) To stimulate the personnel of the in-service education centres in conducting action research and in preparing evaluative instruments and tests.					
(g) To develop evaluative criteria for appraising the outcomes of the in-service education activities.					

Objectives	I Very much	II Much	III Not much	IV Little	V Not at all
(h) To prepare brief annual reports on worth while activities and practices for dissemination in the service area and in the various regional in-service education centres.					

2. Which of the above-stated objectives do you think are difficult to be achieved through in-service training programmes ? Please indicate serial number only.

3. What new objectives do you think should be considered for achievement through in-service training programmes ?

(i)

(ii)

(iii)

C. What are the specific responsibilities of your institution in the :

1. Development of programmes of in-service education at the following levels ? (Please add additional sheets if the space below is not sufficient)

(a) National Level.

(b) Regional Level.

(c) Divisional Level.

(d) Local Level.

2. Co-ordination with in-service education institutions at other levels.

(a) How do you co-ordinate your programmes with the other institutions for in-service education at the following levels ?

(Please leave out the level of your own institution)

(i) Local/District.

(ii) Division.

(iii) Regional.

(iv) National.

(b) Do you think there is un-necessary domination of one level over another, so as to hinder the free development of the programmes ? If so, please state clearly which level is most dominating.

D. Curriculum.

1. What types of courses do you offer to the participants ?

2 How do you select the type of courses for your in-service education programmes ?

3. Do you think the areas covered in your courses meet the most urgent needs of the schools ?

4. If you discover during your visits an important need of the schools, do you give it priority over your previously planned programme and organise a programme as soon as possible to meet this need ?

5. Please give information in the columns given below regarding the in-service education programmes organized by your institution in the year 1965-66,

I S. No	II Nature of the Programme	III Duration	IV Number of participants	V Status of the participants
(i)				
(ii)				
(iii)				
(iv)				

E. Facilitis Available in your Institution.

1. Does your institution have the following facilities for the smooth running of in-service training programmes? Please rate the facilities on the following scale.

Nature of Facilities	I Very good	II Good	III Satisfactory	IV Fairly satisfactory	V Not satisfactory
(a) Audio-visual ...					
(b) Library ...					
(c) Curriculum Laboratory.					
(d) Science Laboratory.					
(e) Mimeograping/ Printing.					
(f) Residential accommodation for the delegates.					
(g) Conference room for the meeting of delegates.					
(h) Furniture for use during the programmes					
(i) Pilot or good elementary schools for visits of delegates.					
(j) Helpful school community relations.					

If your institution does not have the above facilities, can you borrow and provide them from other institutions in the neighbourhood ?

Nature of Facities	I Very easily	II Easily	III With some difficulty	IV With greater difficulty	V Not at all
(a) Audio-visual					
(b) Library					
(c) Curriculum Laboratory.					
(d) Science Laboratory.					
(e) Mimeographing/ Printing.					
(f) Residential accommodation for the delegates.					
(g) Conference rooms for the meeting of delegates.					
(h) Furniture for use during the programmes.					
(i) Pilot or good elementary schools for visits of delegates.					
(j) Helpful school community relations.					

3. What suggestions can you give to improve the provision of such facilities ? Please give your comments about the most urgently needed facilities in your opinion.

F- Staff for In-Service Education

1. Please give in brief the number, the qualifications and the duties of the staff of your institution ?

2. How many of the above staff members have whole-time responsibility for in service education of elementary school teachers ?

3. How many of the above staff members have part-time responsibility for in-service education of elementary school teachers and what is the nature of their responsibility ?

4. Are you satisfied with the number and qualifications of the staff members available for in-service education ? If not please give your suggestions for improvement.

5. Do you have the following institutions in your locality or neighborhood ? If so, are the services of their staff members utilised during the in-service training programmes ?

Types of Institutions	Yes	No	Services utilized	Services not utilised	No. institution
(a) Training institutions.					
(b) Teachers' organizations.					
(c) High schools					
(d) University or colleges.					
(e) Vocational schools.					
(f) School supervisors.					
(g) Retired educationists.					
(h) Community leaders.					
(i) Others.					

G. Time and Place for Programmes

1. On what days of the year do you generally organise your programmes ?

   (i) During week-ends.

   (ii) On school days.

   (iii) During long vacations.

   (iv) After classes, i.e. in the evening.

2. Do you hold in-service training courses in your own institution ?

   (i) Always.

   (ii) Frequently.

   (iii) Sometimes.

   (iv) Rarely.

   (v) Never.

3. If you hold courses at different places outside your institution, what points do you consider in selecting the place ?

   (i)

   (ii)

   (iii)

   (iv)

4. How do you involve the local persons, if courses are organised at different places ?

5. What services do you provide from your institution, if the courses are held at places outside your institution ?

H Methods

1. How often do you use the following methods in your in-service courses? (Please add if there are some other methods employed).

	I		III	IV	V
	Very Frequently	Frequently	Someimes	Rarely	Never
(a) Lecture					
(b) Seminar					
(c) Workshop					
(d) Panel discussion					
(e) Symposium					
(f) Conference					
(g) Role playing					
(h) Debate					
(i) Open forum					
(j) Demonstration					
(k) Inter school visitation.					
(l) Any other					

2. How do you decide upon using specific types of methods of in-service education?

3. Do you also get the opinion of the participants in adopting a particular method of working?

I. Participants

1. Who are generally the participants in your in service education programmes?

   (i) Teachers.
   (ii) Supervisors.
   (iii) Teacher-educators.
   (iv) Any other-category.

2. Do you invite people from all the above categories for the same course or separate courses are organized for each category?

All categories/More than one category/only one category.

3. Do you think it is useful to invite the above categories of persons together ?

   Yes/No

4. Who selects the teachers for in-service education in your institution ? Please check.
   - (i) The teachers volunteer.
   - (ii) Principal or Head-teacher.
   - (iii) District supervisor.
   - (iv) Divisional superintentent.
   - (v) Regional in-service centre.
   - (vi) Bureau of Public Schools.
   - (vii) Any one else ?

5. What is the criterion adopted by your institution in the selection of the participants ?
   - (i) Interests of the teachers.
   - (ii) Needs of the teachers.
   - (iii) Written tests.
   - (iv) Any other (Please specify).

6. What is the number of participants for different courses ?
   - (i) Generally.
   - (ii) Minimally.
   - (iii) Maximally.

J. Service Area

1. What is the service area for your institution in terms of square miles ?

2. How many elementary schools, district supervisors and training institutions (both public and private) fall in your area ?

Elementary schools ____________________

District supervisors ____________________

Training institutions ____________________

3. What will be the number of elementary school teachers in your area ?
4. Do you think it is quite feasible for your institution to cover this area ?

K. Planning the Programmes

1. Do you plan your programmes before the beginning of the year or the semester ?
2. If so, do you rigidly follow it or, if need be, can it be changed ?
3. How do you ensure that the proposed programme is based on the felt needs of teachers ?
4. Do you follow the principle of co-operative planning ? If so, who are the different categories of people involved and what are the procedures followed in evolving the programme ?
5. What is the role of other institutions for in-service education in the planning of your programmes ?
6. Do you have any advisory committee for the development of in-service education programmes ?

Yes/No

If so, please answer the following questions.

7. What are the different categories of persons represented on the committee ?

(i) Teachers.

(ii) Supervisors.

(iii) Teacher-educators.

(iv) Public men.

8. What are the responsibilities of the advisory committee ?

   [i]
   [ii]
   [iii]
   [iv]

L. Preorganization Arrangements

1. How many days before the actual organisation of an activity do you generally send invitations to the participants to join ?

2. Do you, prepare working papers for your programmes ? If so, is it sent in advance to the participants ?

3. What other measures do you adopt to prepare the participants for an effective contribution to the delibrations ?

4. Do you ask the invited participants to inform you whether they are joining the programme or not ?

5. Do you prepare a waiting list of persons to be called in case some persons from the first list express their inability to come ?

6. Do you determine the needs and interests of the participants ? If so, what measures do you adopt for the propose ?

   [i] Informal discussions.
   [ii] Questionnaires.
   [iii] Visiting schools.
   [iv] Any other ?

7. Do you designate a person to whom participants should report on their arrival ? Please check.

   Always.
   Sometimes.
   Never.

M. Organization of Programmes

1. During the Programmes

   (a) How do you generally start your programme ?

   [i] By inviting an educationist to inspire the participants on the inaugural day.

   [ii] By community singing.

   [iii] By discussing the tentative schedules.

   [iv]

   [v]

   (b) What measures do you take to sustain the interest of the participants in the daily routine ?

   [i] By serving tea or coffee at intervals.
   [ii] By organizing demonstrations.
   [iii] By organizing field visits.
   [iv] By organizing short cultural programmes.

   (c) Do you evaluate the progress of the group during the programmes ? If so, how ?

   (d) What are the other activities usually undertaken during a programme ?

   [i] Issuing a newsletter.

   [ii] Library reading.

   [iii]

   [iv]

   (e) What local resources do you make use of during a programme ?

   [i] Resource persons [Please enumerate].

   [ii] Resource materials [of what type].

2. **Resource/Persons/Meterial**

   (a) How do you select your resource persons for your programmes ?

   (b) What facilities do you provide to attract suitable resource persons to assist you in your programmes ?

[c] Do you have any administrative difficulties in getting suitable persons for your programmes? If so, please enumerate.

[d] What sugestions can you give to attract better resource persons?

[e] Do you think the participants, in the in-service education programmes at the national, regional and divisional levels are adequately qualified to serve as resource persons at the local level? If not, please give reasons.

3. Concluding Session

(a) Do you hold a concluding session for each programme?

(b) If so, what do you generally do during this session?

[i] Finalize recommendations.
[ii] Decide on action programmes.
[iii] Listen to an inspirational talk by a person in authority.
[iv] Any other.

(c) Do you evaluate every programme at its conclusion? If so, how.

[i] Questionnaire.
[ii] Oral evaluation.
[iii] Using a committee to report.
[iv] Using reports of observers.
[v] Other methods (Please specify),

N. Follow-Up of the Programmes

1. Do you prepare a report for each programme?

Yes/No

2. If a report is prepared, is it mimeographed or printed and distributed to all the participants?

Yes/No

3. Are these reports sent to other institutions organizing in-service education programmes?

Yes/No

4. If yes, to which category of institutions are these reports generally seat ?

National	Divisional.
Regional	Local

5. Who is generally responsible for the follow-up of the programmes ?
6. What procedures are generally adopted to follow-up the programmes ?
    - (i) Visits.
    - (ii) Correspondence.
    - (iii) Teachers reports.
    - (iv) Others.
7. How do you utilize thc information gathered tbrough follow-up activities for the further organization of your programmes ?

O. Evaluation

, How do you evaluate the effects of your programmes on the schools ?

- [i] Visits and observation.
- [ii] Interviews.
- [iii] Rating scales,
- [iv] Questionnaires,
- [v] Other (Please name).

2. Who are the persons involved in evaluating the programmes ?
    - [i] Teachers.
    - [ii] Principals,
    - [iii] Supervisors at District Level.
    - [iv] Supervisors at Division Level.
    - [v] Supervisors at Regional Level.
    - [vi] Supervisors at National Level.

P. Research Activities

1. Do you think research undertakcn by teachers helps in their in-service growth ?
2. What measures have you taken to encourage research activities by teachers ?

3. What are the major areas of research so far undertaken by teachers ?

4. If no research has been conducted by teachers in elementary schools in area, what do you think are the most common difficulties experienced by them in conducting research ?

5. Do you think teachers in elementary schools in your area are competent to undertake research ?

Q. Utilization of Programmes in Vitalizing Other Areas in Education.

1. Do you think that the organization of in-service-education programmes for elementary school teachers in your area has indirectly helped in vitalizing other services in education such as those given below ? If so please state how.
   (a) Supervisory services.
   (b) Teacher education programme at the pre service level.
   (c) School-community relations.
   (d) Any other.

2. How do you think the programmes can be better organized to extend their benefits to the above service ?

R Supervision.

1. Who supervises your institution for its efficacy in providing in-service education programmes ?

2. How many times in a year is your institution supervised ?

3. How is the supervision conducted ?

4. Do you think supervision helps you in better developing your programmes ?
5. What is the frequency of the meetings of the Advisory Committee ?
6. How are the members of the advisory committee involved at various stages of the organization of programmes ?

S. **Incentives**

1. What incentives do you give to teachers do attend in-service training programmes ?
   - (i) Promotion.
   - (ii) Credit for advanced studies.
   - (iii) Certificates.
   - (iv) Increase in salary.
   - (v) Any other.
2. If you offer some programmes for upgrading the qualifications of teachers, please give details of the kinds of courses offered and the credits given for programmes.

Nature of the course	Credits
(i) Summer classes.	
(ii) Week-end classes.	
(iii) Scholarships for a degree.	
(iv) Any other.	

3. What other types of incentives would you recommend to attract teachers to such courses ?
4. Do the teachers like to attend your courses voluntarilv ?
   Yes/No
5. Is official persuasion or presure exercised on them to attend such courses ?

T. **Difficulties and Drawbacks**

1. What are the difficulties faced by your institution in organizing effective programmes of in-service education for teachers ?

(i)
(ii)
(iii)
(iv)
(v)

2. What do you think are the general drawbacks in the organization of the programmes at the various levels in the Philippines ? (Please leave out the level of your own institution).
    (i) Local.
    (ii) Divisional.
    (iii) Regional.
    (iv) National.

U. Financial Aspects

. Does your institution have any specific yearly budget allotement for organizing in-service education programmes ? If so, please give details for the different items under the following headings :
    (i) Non-recurring expenditure.
    (ii) Recurring expenditure.

2. What are the other sources of financing in-service training programmes ?

3. What specific suggestions can you make for overcoming the financial handicaps in the way of developing ins ervice education programmes ?
    (i) For non-recurring expediture.
    (ii) For recurring expenditure.

V. Other Agencies in the Locality Organizing In-Service Education Courses.

1. What are the other institutions in locality which formally or informally organize in service education programmes for elementary teachers ?

Nature of Institutions	**Organize formal programmes**	**Organize formal programme**
(i) Traing colleges.		
(i) Teachers' organizations.		
(iii) Community.		
(iv) Local schools.		
(v) Any other (Please specify).		

2. How do you extend the facilities of your institution to those agencies and how do you collaborate with them in their programmes ?

W. Miscellaneous

1. Keeping in view the utility of in-service education programmes, how would you rate the success of these programmes on the following scale ?

   (i) Very successful ( )
   (ii) Successful ( )
   (iii) Satisfactory ( )
   (iv) Fairly Satisfactor ( )
   (v) Un-satisfactory ( )

X. What suggestions can you give to improve the utility of the in-service training programmes to the participating teachers ?

   (i) National Level.
   (ii) Regional Level,
   (iii) Divisional Level.
   (iv) Local Level.

INSTITUTE OF EDUCATION FOR WOMEN
Dept. of Extension
SERVICE.
CALCUTTA-27

APPENDIX B

(Inclosure No. 2 to Memorandum No. 43, is. 1963)

OBJECTIVES

The regional in-service education centres aim to carry out the following objectives :

1. To serve as a basis for a nationwide in-service programme for up grading instruction and administration.

2. To carry forward and expand the demonstration pro gramme demonstration teaching in English as a second language, social studies, industrial arts, science and home economics) begun in most of the 102 pilot schools under the BPS-AID-NEC Elementary Education Improvement Sub-Project which phased out on June 30, 1962.

3. To enhance and up-grad supervisory and adminstrative practices needed to implement in-service education programme by providing specific training in the United States and Southeast Asia.

4. To hold workshops and seminars for head teachers principals, and supervisors from divisions served by the centre.

5. To allow teachers in divisions served by the centre to observe demonstration classes any time during the school year in limited number (from 5 to 10).

6. To work with the division office staff in planning in-service education programmes.

To develop regional study groups to assist in solving problems of in-service education in the division or regional level.

8. To encourage organizational and professional activities of representatives from all subject matter fields, administrative and supervisory groups.

9. To make the facilities of the centre available for division or regional work conference or workshops.

10, To make available instructional materials prepared at the centres.

11. To assist the personnel of the in-service education centres in conducting action research and in preparing eva-l uative instruments and tests.

12, To assist in the preparation of instructional mateials-that may be printed in the three regional materials production centres located in the General Office, Manila, Cebu City, and Zamboanga City.

13. To promote and encourage the preservation of the cultural heritage indigenous to the region.

14. To study and make decisions on educational issues common to a region, needing continuing research.

15. To evaluate regional education needs.

ABOUT THE BOOK

The study is very comprehensive in nature and includes all the important features of in-service education programmes for primary teachers in the Phillipines. The working procedures of these programmes at different levels have been studied very carefully, A number of techniques including documentary analysis, questionaire, interview, attendance at conferences, etc. have been applied to understand these prrocedures.

In the light of his study, Shri Chilana, has drawn certain conclusions and has offered suggestions for improving the in-service education programmes of elementary school teachers of this country. His suggestions may prove useful in implementing the Education Commission's recommendation that there should be a large scale, systematic and co-ordinated programme of in-service education so as to involve the maximum number of teachers.

The publication also presents an outline of how different educational agencies of our country like Supervisory Staff, Teacher Training Institutions, Professional Organizations, Quality Schools, State Insitutes of Education, N.C.E.R.T., Radio and Television, etc. can play their role in the best possible manner in co-operation and collaboration with one another to achieve the Commission's objective.

—**S. N. Mukerji**
President,
Indian Association of Teacher-Educators.

New Delhi,
June 30, 1968.

grade the merit of SC/ST Students by providing them extra coaching, both remedial and special, with a view to removing their educational deficiencies in school subjects and facilitating their admission in professional course where entry is based on competitive examination. The SC/ST Students, who are selected under the scheme, are placed in good residential school having adequate facilities for 'Special Teaching'. It is being operated through state governments/union territory administrations. The scheme was started by providing for 1,000 students (670 SC and 330 ST) in 50 schools. Allocation of schools to different states is made on the basis of their illiterate population of SC/ST Communities. Remedial coaching starts at Class IX level and continues till a student completes Class XII. Besides, Special Coaching is provided in Classes XI and XII also. Under the scheme, there is no income ceiling. Annual budget provision of Rs 50 lakh is provided.

GOVERNMENT SCHEME OF SCHOLARSHIPS IN APPROVED RESIDENTIAL SECONDARY SCHOOLS

The objective of the Scheme is to provide educational facilities to talented but poor students (age group 11-12 years) for studying in good residential schools. Five hundred students were selected for award of scholarships during 1989-90. Income Ceiling of the parents/guardians for eligibility is Rs 25,000 per annum. Fifty per cent of these scholarships were awarded on All India Merit and the remaining fifty per cent allocated to states/union territories according to their population subject to fulfilment of minimum standards laid down. Students belonging to Scheduled Castes and Scheduled Tribes were given, respectively, 15 per cent and seven and half per cent of these scholarships. The scholarships are tenable for the entire period of secondary schooling, including the plus two stage of education in approved residential schools. Scholars are entitled to full amount of tution fees, residential charges, cost of books and stationery in addition to pocket money, uniform/clothing allowance and excursion charges at the rates/ceilings decided by the Government. A Travel Grant is also admissible to the scholars and their escorts according to the rates prescribed for the purpose. Annual Budget Provision provided is for Rs 218 lakh.

SCHOLARSHIPS TO STUDENTS FROM NON-HINDI SPEAKING STATES FOR POST-MATRIC STUDIES IN HINDI 1989-90

The scheme for Scholarships to Students from Non-Hindi Speaking States for Post-Matric Studies in Hindi, 1989-90's object is to encourage study of Hindi in Non-Hindi Speaking States/Union Territories and to make available to the Government's of those states/union territories suitable personnel to man teaching and other posts where knowledge of Hindi is essential. It started way back in 1955-56. Two Thousand Five Hundered Scholarships were allocated to various Non-Hindi Speaking States/Union Territories during 1989-90. The rates of Scholarships vary from Rs 50 to Rs

125 per month depending upon the course of study. Annual Budget Provision provided is to the tune of Rs 34.10 lakh.

RESEARCH SCHOLARSHIPS FOR CLASSICAL LANGUAGES

Twenty Scholarships are awarded every year under this scheme for Research Scholarships for Classical Languages. Research Scholarships to products of Traditional Institution engaged in the study of Classical Languages other than Sanskrit i.e., Arabic and Persian are awarded twenty every year. In 1989-90 also, 20 scholars were selected for this award.

NATIONAL SCHOLARSHIPS AT SECONDARY STAGES FOR TALENTED CHILDREN FROM THE RURAL AREAS

The scholarships awarded every year under this scheme of National Scholarships at Secondary Staes for Talented children from the Rural Area is 38,000. The break-up of 38,000 Scholarships allocated during 1989-90 are given below:-

		Total number of scholarships
General Category	3 scholarships per Community Development Block	15,000
Children of Landless Workers	2 scholarships per Community Development Block	10,000
Scheduled Caste Children	2 Scholarships per Community Development Block and additional sholarships per Community Development Block having 20 per cent or more Scheduled Caste Population.	11,000
Scheduled Tribe Children	3 scholarships per Tribal Community Development Block	1,500
		38,000

This scheme is being implemented through state government and union territory administrations. Annual Budget Provision provided is for Rs 85 lakh.

COMMONWEALTH SCHOLARSHIP/FELLOWSHIP SCHEMES OFFERED BY THE GOVERNMENT OF UNITED KINGDOM/CANADA

Under this scheme of Commonwealth Scholarship/Fellowship Schemes offered by the Government of UK/Canada, scholarhsips/fellowships are awarded to Indian Nationals for higher studies research/training in the United Kingdom, Canada, Hongkong, Nigeria, Trinidad and Tabago and other Commonwealth Countries. The number of scholarships depends on the offer from the Association of Commonwealth Universities. Approximately 40-50 scholarships are awarded under this scheme. Besides, quite a good number of scholarships/fellowships are awarded under various other schemes like Nehru Centenary British Fellowships, Jawaharlal Nehru Memorial Trust Fellowships, Technical Cooperation Training Programme, Dr Amilcar Cabral Scholarships, Dr Anaurin Bevan Memorial Fellowship and Technical Cooperation Scheme of the Colombo Plan for advance studies/research/training in various disciplines in different countries.

EXTERNAL SCHOLARSHIP

The Scheme of External Scholarships for study Abroad was in operation since 1971-72 but was wound-up during 1990-91. About Fifty scholarships were awarded every year under this scheme.

Scholarships for advanced or specialised studies are offered under the provisions of the Cultural Exchange Programme, Bilateral Agreements, Commonwealth Scholarship/Fellowship Plan and Ad-hoc Scholarship offers received from different countries. These scholarships are mostly for Ph.D (Doctoral) and Post-doctoral Specialisation for which the minimum eligibility requirement is a First Class Master's Degree. During 1990-91, 57 selected candidates went to U.K./Canada, eleven to Italy, three to USSR, twelve to China and 32 to other countries.

BOOKS

NATIONAL BOOK TRUST

The National Book Trust, (NBT) India, an autonomous organisation under the Department of Education, Ministry of Human Resource Development, plays an important role by publishing books for general reading on a variety of subjects, fiction and non-fiction in various major Indian Languages and promoting the book reading habit among people of all age groups. Broadly, its activities include: (i) assistance to publishers for bringing out books for children, neo-literates and for the higher education sector. (ii) book promotion.

To fulfill the objective of publication, promotion and dissemination of books which would contribute significantly to the making of a better, enlightened society and National Development, NBT publishes books under some well-refined series in English, Hindi and various other Indian languages at prices one can easily afford. To meet the National Requirements, it promotes publication of books on subjects in which books are not available in adequate numbers. It also undertakes various programmes to expose the people to books, promote the book reading habit and even encourages authorship in areas in which writers have not taken much interest over the decades.

PUBLISHING

In its endeavour to provide suitable, reasonably priced reading material, the National Book Trust has been publishing books on a variety of subjects such as physical environment and culture of India, folklore of the various states of India, popular science, biographies of eminent Indians and for children, the young adults and neo-literates. Translations of significant creative writing in various Indian languages are also published by the trust. Over the last two years, the National Book Trust's publications have shown a marked improvement both qualitatively and quantitatively. *Since its inception and upto December 1990, 5029 titles in various languages have been published by the trust of which 279 were published between April and December 1990.*

ASSISTANCE TO PUBLISHERS

NATIONAL BOOK TRUST'S SUBSIDISED PUBLICATION OF BOOKS

Since 1970, the National Book Trust has been operating a scheme to provide subsidy for the publication of books for the higher education sector. Books for which there is a difinite need and which relate to subject areas in which books are not available or are highly-priced are the ones which receive assistance, on the condition, that the selling price of the books would be fixed within the reach of an average student. Besides, subsidy to the publisher, the trust pays an attractive royalty directly to the Author. 781 titles have been subsidised by the trust till December, 1990.

NATIONAL BOOK TRUST'S EXPLORATORY SCHEME TO PROVIDE ASSISTANCE FOR THE PRODUCTION OF BOOKS

Financial assistance is provided to private publishers and voluntary agencies for producing quality books for children, neo-literates and school drop-outs. It makes direct payment to the Authors and Illustrators and bears expenses of preparing the positives of selected manuscripts. The selling price of the books is fixed by the trust.

BOOK PROMOTION

FAIRS, FESTIVALS AND EXHIBITIONS TO PROMOTE BOOKS

National Book Trust (NBT) also plays a pioneering role in the field of book promotion by organising books fairs, festivals and exhibitions. Seminars, Symposia and Workshops are also organised by it to encourage valuable interaction amongst readers, writers, intellectuals, publishers, booksellers, etc. Since 1989, celebration of the National Book Week form 14 to 20 November evey year has been taken up by the trust as a book promotion activity. The trust has so far organised Nine World Book Fairs in New Delhi and the Ninth World Book Fair, which was a roaring success, was held from 13 to 18 February, 1990. The National Book Fair and the World Book Fair are organised by the National Book Trust every alternative year. The 15th

National Book Fair was held from 28 December, 1990 to 6 January, 1991 at Jaipur. It was a very well-attended fair and received excellent response from the public and media. *Over two lakh book-lovers visited this biggest ever National Book Fair, which drew 267 participants and displayed 2.5 lakh to 3 lakh books from all over India and the English Speaking World. It is estimated that books worth Rs 40 lakh were sold.* A 'Rights Hall' was also set up whereabout 800 books in different languages were displayed for promoting sale of their translation rights.

Another popular fair organised by the NBT for promoting children's literature, is the Children's Book Fair. The latest one was held at India Gate Lawns, New Delhi, from one to ten December, 1990. The fair witnessed enthusiastic participation from children and other visitors. Over 60 publishers and booksellers took part in this fair. Children participated in slogan writing, painting, story-telling and other competitions.

Two book festivals are also organised every year by the NBT. The response of the Pune Book Festival, organised by the trust from 27 September, 1990 to 7 October, 1990, received both from the participants and the buyers, was beyond all expectations. The participation from the publishers was the highest as recorded by the NBT in any book festival. As against 70 participants in the Ernakulam Book Festival held in August, 1990, over 100 leading publisher/booksellers form Agra, Allahabad, Calcutta, Delhi, Jaipur, Madras, Patiala, Pondicherry, Bombay and Pune participated in the "largest ever exhibition of books" Pune, Maharashtra. Organised in collaboration with the State Government and the Marathi Prakashak Parishad, the ten day Book Festival featured one lakh books covering a huge gamut of subjects and titles for all the age-groups.

NATIONAL BOOK WEEK

The objective of celebrating a 'Book Week' every year all over India is to create an awareness about the importance of books among individuals, educational institutions, policy makers, voluntary agencies, etc. Since it is difficult to inculcate reading habits in people older than 18-20 age group, 'Book Week' is primarily directed towards students. The National Book Trust mails posters and other promotional material to the Senior Secondary Schools, colleges, universities, public libraries prior to the 'Book Week' to promote Book Week Activities. Meetings and book-related programmes are organised by authors, intellectuals, librarians, publishers, booksellers, etc. In addition, booksellers organise 'book exhibitions-cum-sales' during the week.

The Sixth National Book Week was celebrated all over India from 14 to 20 November, 1990. On the inaugural day, well-known authors of various languages read out parts of their works to the audience in functions organised by the trust in Delhi, Bangalore, Bombay and Calcutta. Senior Secondary Schools, Kendriya Vidyalayas and Navodaya Vidyalayas in various cities and districts of India celebrated 'Book Week' by organising competitions in book reading, poetry recitation, creative writing, debating, painting, book jacket designing, book binding, etc. Readers Clubs were also set up in educational institutions.

Various booksellers organised 'book exhibition-cum-sales' all over India for which assistance was provided by the trust.

PROMOTING SALE OF NBT PUBLICATIONS THROUGH BOOK FAIRS AND EXHIBITIONS

As part of its sale promotion measures, the National Book Trust (NBT) arranges display and sale of its publications in book fairs and exhibitions organised both by the NBT and by other organisations. The 'sales-cum-exhibition van' that was put into service during 1989-90 is effectively used for promoting books sales. It is sent not only to different schools, colonies, etc. of Delhi but is also sent on tour to various parts of the Country. In a concerted move to make books available in various parts of the country, the NBT sent its 'sale-cum-exhibition van' on a tour of Punjab in May, 1990. The van went through Preet Nagar, Amritsar, Moga, Ferozepur, Bhatinda, Barnala, Patiala, Khanna, Samrala and Chandigarh. In August 1990, the van was sent to Lucknow, Kanpur, Aligarh, Hapur and Moradabad in Uttar Pradesh, carrying about 300 titles of children's books and another 200 titles for young adults and grown-ups and the neo-literates visiting various schools and important market places.

SEMINARS AND WORKSHOPS

An important book promotion activity of the trust is the organisation of seminars and workshops, etc. on various aspects of publishing. Such activities provide a common platform for interaction between publishers, booksellers, librarians, printers, authors, illustrators, etc.

Easy reading material for neo-literates in various Indian Languages is brought out by the trust under the scheme of production of reading material for continuing education of neo-literates and school drop-outs. The trust has evolved various methods for preparing manuscripts for the target audience. One method which has been tried out with some success is the organisation of workshops in different States.

A number of seminars/workshops were organised between April and December, 1990 by the NBT including a workshop for writers and illustrators of books for Neo-literates, New Delhi (27 March to 1 April, 1990) and a seminar on 'development, illustration and evaluation of books for neo-literates' organised jointly by the Directorate of Adult Education, Government of India and NBT, Jaipur (3-4 January, 1991).

INTERNATIONAL BOOK FAIRS ABROAD

On behalf of the Department of Education, Ministry of Human Resource Development, Government of India, the National Book Trust participates in various International Book Fairs and Exhibitions and puts up collective "Books from India" exhibit of contemporary Indian Books. The National Book Trust in this way is totally dedicated to the cause of book promotion.

EXPORT PROMOTION

There is a vast change in Indian Publishing after the Independence. It has attained the status of its own in Indian Languages as well as English. The books are the most important tool of education and no country can movė ahead in education, scientific and technical field without a viable National Authorship and Publishing Industry. India is one of the major Book Producing Countries of the World in production of English Titles. To promote sale of Indian books and Translation Rights Abroad and for securing printing jobs from Abroad, steps are being taken to promote Indian Books through participation in the International Book Fairs by conducting market studies and commercial publicity through circulation of annotated catalogues, brochures, etc. The export of books and publications was of the order of Rs 30 crore (as estimated by CAPEXIL) during 1989-90.

IMPORT POLICY FOR BOOKS

The New Import Policy has come into effect from April, 1990 and it will remain in force upto March, 1993. Import of educational, scientific and, technical books, journals, etc, are allowed under the Open General Licence (OGL). Importers of films whether cinematographic or video as Teaching Aid as mentioned in the Import Policy of Books, shall produce to the Customs a certificate from the Centre of Film Certification that the films imported are predominantly educational and can be imported under OGL. Dealers with a turn-over of books valued at Rs three lakh or more are eligible to apply for Import Licence on the basis of ten per cent of their purchase turnover for the books other than those covered by OGL.

COPYRIGHT

Copyright Protection is governed by the Indian Copyright Act, 1957. A Copyright Office has been set up to register works in which Copyright exists so that owners of Copyright in such works can have a prima facie evidence of their ownership under the act. A Copyright Board with powers of adjudication in Copyright disputes has also been set up.

India is a member of Two International Convention on Copyright, namely; Borne Convention (1948) and Universal Copyright Convention (1952). Both these conventions were revised at Paris in 1971 whereby 'special concessions' were given to the Developing Countries enabling them to issue compulsory licences for reproduction and translation of books of Foreign Origin for educational purposes. The Indian Copyright Act was amended in 1983 with the specific purposes of (a) incorporating the provisions of the Paris Text of 1971 concerning grant of 'compulsory licence' for translation and reproduction of 'compulsory licence' for translation and reproduction of Foreign Works required for educational purposes; (b) providing adequate protection to Authors' Right and (c) removing administrative drawbacks and other lacunae experienced in administration of the Copyright Act, 1957. The Amended Act came into force from 9 August, 1984.

The Copyright Act was further amended in 1984 in order to check the problem of wide-spread Piracy. The Copyright (Amendment) Act, 1984, has been enacted and necessary provisions made to Combat Piracy by making punishment for various offences more stringent. *Infringement of copyright is now a congnizable offence.* The amended act provides for enhanced punishment imprisonment from six months to three years and fine from Rs 50,000 to Rs two lakh. The amended act came into force from eight October, 1984.

NATIONAL AGENCY FOR INTERNATIONAL STANDARD BOOK NUMBERING SYSTEMS IN INDIA

The Raja Rammohan Roy National Educational Resources Centre was established in 1972 as a part of the Copyright and Book Promotion Division with a view to promoting writing and production of indigenous University-Level Books through various book promotional activities like organizing exhibitions of University-Level Books in the Indian Universities by rotation, on-the-spot evaluation of indigenous University-Level Books by subject experts, providing free publicity to indigenous publications, creating awareness among teachers and students about presence of standard indigenous University-Level Books in India, etc. To modernize the Indian Book Industry and bringing it at par with Sister Book Industries in the World, the Government of India introduced the International Standard Book Numbering System (ISBNS). This system reinforces the efforts of the Government to boost the book exports to Various Countries of the World. The Raja Rammohan Roy National Educational Resources Centre was reorganized in 1988 and except for the National Agency for ISBN which earlier formed the integral part of this Centre, all other activities were discontinued.

The National Agency for ISBN in India was established on 1 January, 1985 and since then it has been registering the Indian Publishers under the system. More than 900 publishers, big and small, are the members of the ISBNS. The International Standard Book Numbering system is a unique number given to a book from one specific publisher to identify its publisher, the individual title or volumes of a multi-volume work and is unique to that title or edition or volume. The ISBN consists of four parts namely, group identifier, publisher identifier, title identifier and check digit.

This system has been found useful for recording information in publishers accounting, data storage and ware-housing operations as well as for ordering and stock control purposes in book-selling and library environment. The Indian National Agency for ISBNS operates with technical advice from International ISBN Agency, Berlin. The system is helping a large majority of publishers and wholesalers in speeding-up deliveries and entire process of stock book fulfilment is expedited. It also simplifies Foreign Book Ordering needed by our leading publishers exporting books Abroad.

PROMOTION OF LANGUAGES

The Government encourages development of all Indian Languages including Classical, Modern and Tribal. Its policy lays emphasis on training of teachers in relation to adoption of the Three-language Formula and production of University-Level Textbooks with a view to media switch-over from English to the Regional Languages. Support for promoting of facilities for teaching of Hindi in Non-Hindi Speaking States is provided and financial assistance given for the appointment of Hindi Teachers in their schools, establishment of Hindi Teacher Training Colleges and award of scholarships to students in these states for study of Hindi beyond the Matriculation Stage. Assistance is also given to voluntary organisations enabling them to hold Hindi Teaching Classes, conducting research on Methodology of its teaching and providing Hindi books to various organisations. Various Schemes are in operation to promote and develop Tribal, Classical and Modern Indian Languages and prepare and publish books, dictionaries, research and instructional material besides training of teachers.

HINDI

Through 'Kendriya Hindi Sansthan, Agra' Government of India promotes development of improved methodology for teaching Hindi to the non-Hindi Speaking Students and preparation of suitable teaching material. Central Hindi Directorate runs programmes relating to purchase and publication of Hindi Books and their free distribution in Non-Hindi Speaking States and to the Indian Missions; Hindi Teaching Correspondence Courses through the Medium of English, Tamil, Malayalam and Bengali for Foreigners and Non-Hindi Speaking Students; and preparation publication of Terminology, Bilingual and Trilingual Dictionaries, etc.

Commission for Scientific and Technical Terminology, New Delhi, prepares and publishes Difinitional Dictionaries and Terminology in various disciplines and Pan-Indian Terminology, Hindi-English Glossaries in Basic Sciences, Humanities, Social Sciences and Applied Sciences, University-Level Books in Agriculture, Engineering including Polytechnic, Veterinary Sciences, Forestry and Medical Sciences including Nursing, Para-medical and Pharmaceutical Sciences. Grants-in-aid to voluntary organisations working for Hindi are released for spread and development of Hindi.

In order to assist Non-Hindi Speaking States/Union Territories to effectively implement the three-language Formula, financial assistance for appointment of Hindi Teachers for Upper Primary, Middle, High and Higher Secondary Schools is also sanctioned. Financial Assistance for setting up Hindi Teachers training colleges in non-Hindi Speaking States/Union Territories is being sanctioned under another Centrally-sponsored Scheme. The grant-in-aid is provided mainly to assist the consolidation and further development of Hindi Teachers training colleges in Non-Hindi Speaking States/Union territories and to a limited extent to assist the setting-up of a new institution in such areas which are in need of such assistance.

Fifty scholarship are awarded every year to the Foreign Students for study of Hindi in Central Hindi Institute, New Delhi, Hindi Books are supplied for setting up Hindi Libraries in Indian Missions to provide material in Hindi where there is a sizeable population of Hindi Speaking Residents. Hindi Typewriters and other equipments are also supplied. Hindi Teachers are provided in Caribbean Countries and Sri Lanka.

MODERN INDIAN LANGUAGES

Financial Assisatance is given to voluntary organisations and individuals to bring out publications like Encyclopaedias, Dictionaries, books of knowledge, Original Writing on Linguistic, Literary, Indological, Social, Anthropological and Cultural Themes, critical editions of old manuscripts, etc., for the development of Modern Indian Languages. Grants are also given for holding literary conferences, seminars and exhibitions besides, purchasing copies of printed publications. States are given special help for the production of University-Level Books in the Regional Languages. *The bureau for Promotion of Urdu was set up in 1969. Apart from it working as a Secretariat to the Taraqqi-e-Urdu Board which advises the Government on development of Urdu, it also develops Educational Literature in Urdu.* The bureau has established 38 Calligraphy Centres where instruction is given to students in *'Kitabat.'* Of these, five have been specially set up for women and three for training in 'Decorative calligraphy.'

The Government also provides facilities for study of languages other than Mother Tongue. For this, the Central Institute of Indian Languages (CIIL) Mysore, conducts research in the areas of Language Analysis, Language Pedagogy, Language Technology and Language-use. Study of the Tribal Languages is one of its important functions. By now, CIIL has taken up 57 tribal and border languages/dialects for linguistic description and material production. It supports Six Regional Language Centres at Bhubaneshwar, Mysore, Patiala, Pune, Solan and Lucknow to help meet the demand for trained teachers to implement the Three-language Formula.

ENGLISH AND FOREIGN LANGUAGES

The Central Institute of English and Foreign Languages (CIEFL), Hyderabad, which was set up as an autonomous body in 1958, is engaged in bringing out qualitative improvement in teaching of English. Subsequently, teaching of major Foreign Languages, viz., Russian, German, French and Arabic and their Literatures was also included in its activities. *In 1973, it was declared to be an Institution of Higher Learning Deemed-to-be University. It has two regional centres at Shillong and Lucknow.*

Financial assistance is also provided to states for setting up CIEFL's District Centres for English with a view to improving the standard of

English Language, teaching and learning. These centres aim at imparting training to teachers of English in their areas through 'Orientation Courses' followed, by long-term professional support and guidance through correspondence. Under another scheme, financial assistance is given to regional and state institutes of English for strengthening their programmes of training.

SANSKRIT AND OTHER CLASSICAL LANGUAGES

There are many schemes for propagation, popularisation and development of Sanskrit and other Classical Languages like Arabic and Persian. Provision under these include financial assistance to the Voluntary Sanskrit Organisations; development of institutions run by voluntary organisations into Adarash Sanskrit Pathshalas; for employment of professors, younger teachers; for publication of original writings of contemporary authors; editing and publication of rare manuscripts and catalogues of manuscripts; reprinting of important out-of-print Sanskrit Texts; promotion of Oral Vedic Tradition, vocational training to products of Sanskrit Pathshalas; National Awards to eminent scholars and preparation/publication of Sanskrit Dictionaries.

Registered organisations engaged in the development and propagation of Sanskrit are given Recurring and Non-recurring Grants for salary of teachers, scholarships to students, construction and repair of buildings, library books, research projects, etc., upto 75 per cent of the approved expenditure. During 1988-89, about 650 voluntary institutions conducting courses on Traditional Sanskrit Education and about 150 institutions working in the field of propagation and promotion of Arabic/Persian have been benefitted by this scheme. Institutions having potential for greater development are identified and brought under the scheme of 'Adarsh Sanskrit Pathshalas and Shodh Sansthans.' At present, 14 such pathshalas are being run.

Under the scheme of Certificate of Honour to Sanskrit, Arabic and Persian scholars, Ten Eminent Sanskrit Scholars and Two Each in Arabic and Persian are honoured by the President Every Year. They are also given a grant of Rs 10,000 per year for life-time. Till 1989, 286 scholars had been awarded this honour.

The Department of Education also conducts an all-India Vedic Convention and All India Sanskrit Elocution Contest in different part of the Country every year where about 100 scholars in different Shastrsas and a team of eight contestants from all states are invited with a view to identifying the rare Veda Shakhas and their repositories, devising ways and means for Preserving the Oral Tradition and encouraging extempore speech on classical subjects. As a special incentive to Preserve Oral Tradition of Vedic Studies, a scheme was introduced during 1978 under which each Swadhyayin is expected to train two students each below 12 years, one of them being his own son or near relative, in a particular *Veda Shakha*. The scholar gets an honorarium of Rs 1,250 and the student Rs

175 per month. In all, 15 such units are receiving assistance. Eight of them were set up after the Vedic Convention held in New Delhi in August, 1987.

Rashtriya Veda Vidya Pratishthan has been set up with the objective to preserve, conserve and develop Oral Tradition of Vedic Recitation. For this, the Pratishthan undertakes various activities such as supporting Traditional Vedic Institutions and scholars, providing fellowships, scholarships, etc.

A new scheme was introduced in 1982-83 to enhance employment-opportunities to students from *Kendriya Sanskrit Vidyapeeths* and other Traditional Sanskrit Institutions. It aimed at providing short-term vocational training to these students in subjects allied to Sanskrit Studies, namely, Ritualogy, Epigraphy, Manuscriptology, Sanskrit Printing and Composing, etc. For conducting these courses, 12 institutions were given cent per cent grant during 1988-89. Under *Shastra Chudamani scheme,* young scholars are given in-depth coaching in Kendriya Vidyapeeths/Adarsh Sanskrit Pathshalas, etc., in various disciplines by utilising services of eminent elderly scholars. These scholars are apointed on a monthly honorarium of Rs 1,000. Similarly, there are 25 institutions which are given 95 per cent grant for popularising Vedic Education. The Government is also providing financial assistance to Eight Veda Units which are engaged in the preservation of Oral Tradition of Vedic Recitation.

Rashtriya Sanskrit Sansthan, an autonomous organisation with its headquarters at Delhi, exercises academic and administrative control over eight Kendriya Sanskrit Vidyapeeths at Delhi, Jammu, Allahabad, Tirupati, Guruvayoor, Puri, Jaipur and Lucknow where post-graduate Sanskrit Education in *Traditional Shastras* and research in various fields are conducted. Vidyapeeths of Delhi by the name of *Shri Lal Bahadur Shastri Rashtriya Sanskrit Vidyapeetha, Triputi,* have since been declared 'Deemed-to-be Universities' in 1987. Their objectives being mainly to preserve shastraic tradition, to establish their relevances to the problems in the modern context and to achieve excellence in these disciplines so that the *Vidyapeetha* has a distinctive character of its own. The *Vidyapeethas* have already started functioning. Besides, 39 institutions in the Country are affiliated to it for purpose of examination. It conducts examinations right from *Prathma to Vidyayaridhi* and *Vachaspati* (Ph. D. and D. Litt.) respectively. The Government is assisting contemporary authors of Sanskrit in publishing their books. The assistance has since been increased from 60 to 80 per cent of the approved expenditure. Research institutions and established departments of the Universities are also assisted to prepare and publish critical editions of Rare Manuscripts and catalogues in Sanskrit. During 1988-89, 30 publications, six catalogues and three critical editions were published with the Government Assistance.

Assistance ranging from Rs 1,500 to Rs 10,000 has been given to the Editors of 27 Sanskrit Journals for improving their quality and content. Besides, the Government is also assisting *Dharma Kosh Mandal, Wai;* All India *Kashiraj* Trust, *Varanasi;* Kalpatarn Research Academy, Bangalore, and some individuals for preparation and publication of certain projects relating to the Sanskrit Literature.

A programme was launched from 1982-83 to bring out reproduction of important out-of-print Sanskrit books by the Photo Offset Process at reasonable prices through Commercial Publishers. Under it, about 100 publications have come out so far. Old and Eminent Sanskrit Scholars in indigent circumstances are being helped. About 1,500 scholars received this assistance in 1988-89.

The Department of Electronics has drawn up a programme, namely, Technology Development for Indian Languages for implementation during the Eighth Plan. This programme would cover development of requisite technology for information processing in Urdu Language also. It would include technology development activities mainly in thrust areas which include Learning Systems, Machine Translation Systems and Human Machine Interface Systems.

SANSKRIT

To preserve, conserve, develop and propagate Indian Cultural Heritage and its appreciation for promotion of National Integration, Sanskrit has always been emphasised in the developmental programmes of the Government of India. In order to achieve these objectives, a variety of programmes have been formulated and implemented for the development and promotion of Sanskrit Language in Education and Higher-learning Programmes have also been implemented for the development of Arabic and Persian Languages.

The Rashtriya Sanskrit Sansthan, New Delhi, is an autonomous organisation under the Ministry of Human Resource Development set up for preservation and propagation of Sanskrit publication and preservation of manuscripts and for organising training activities. Since 1970, it has established eight *Kendriya Sanskrit Vidyapeethas* in seven states situated at Tirupati, Delhi, Jammu, Allahabad, Puri, Guruvayoor, Jaipur and Lucknow. In addition, 51 private institutions are also affiliated to it for the purpose of examination. During 1990-91, all formalities have been completed in respect of Tirupati and *Delhi Vidyapeethas* for their separate working as 'Deemed to be Universities' from the coming session i.e. 1991-92. The assets in respect of these *Vidyapeethas* have already been transferred to them by the Sansthan.

Under the Financial Assistance to Voluntary Sanskrit Institutions Scheme, registred Voluntary Sanskrit Organisations/Institutions are given Recurring and Non-recurring Grants for salary of Teachers, scholarships to students, construction and repair of building, furniture, library, etc. seventy five per cent of the approved expenditure on each of the above mentioned items is given as grant from the Ministry and in the case of Vedic Institutions where oral Vedic tradition is being preserved, the Government grant covers 95 per cent of the total approved expenditure. *About 700 Sanskrit Organisations in the country are being given financial aid during this year.*

Some of the Voluntary Sanskrit Organisations like *Adarsh Sanskrit Mahavidyalayas/Shodh Sansthans* having potential for future development and offering Post-graduate Studies, have been recoganised as *Adarsh Sanskrit Mahavidyalayas* and are provided with financial assistance at the rate of 95 per cent Recurring and 75 Non-recurring Expenditure. So far, 14 Post-graduate Sanskrit Teaching Institutions and Two Post-graduate Research Institutions have been brought under the purview of this scheme. Three of them are in Uttar Pradesh, one in Kerala, four in Bihar, two in Haryana, two in Maharashtra, three in Tamil Nadu and one in Himachal Pradesh.

Financial assistance is being provided to Deccan College, Pune, for preparing a Sanskrit Dictionary on historical principles which will help research scholars in the interpretation of old and difficult Sanskrit Texts. Three parts each of Volume I and II and Two Parts of volume III have already been published.

The Central Sanskrit Board is an advisory body to advise the Government of India on matters of policy pertaining to the propagation, promotion and development of Sanskrit in the Country including pattern of Sanskrit Education at different levels, co-ordination of courses, etc. It was re-constituted with effect from First March, 1989, for a period of three years. The Board has since met thrice from July, 1989 to September 1990. The Board, in its second meeting, had constituted six committees to study and submit the report on mainly among other issues, Sanskrit and National Integration; Scientific, Technical and Engineering Knowledge in Sanskrit Literature; Popularisation of Sanskrit Amongst the Masses; and Inter-translation of Sanskrit Literature and the Literatures of other Indian Languages.

Award of Certificate of Honour to Sanskrit, Arabic and Persian Scholars Scheme envisages giving of President's Award of Certificate of Honour to eminent Sanskrit, Arabic and Persian Scholars. Annually 14 Scholars, Ten in Sanskrit and Two each in Arabic and Persian are selected for the award and their names are announced on the Eve of the Independence Day. In 1990, 17 Scholars were selected for this award, 12 in Sanskrit, Two in Persian and Three in Arabic. The number has been further increased. From 1991, 21 awards will be given—15 in Sanskrit, Three in Arabic and three in Persian. The award carries an Annual Monetary Grant of Rs 10,000 for life to the Scholars. Each Scholar is presented with a 'Sanad' and a 'Shawl' at a function to be held at Rashtrapati Bhavan.

Development of Sanskrit through State Governments/Union Territories Scheme provides for 100 per cent grant to the State Governments. The grant includes; (a) financial assistance upto Rs 4000 per annum to Eminent Sanskrit Scholars in indigent circumstances whose income is below Rs 4,000 per annum; (b) for modernisation of Sanskrit Pathshalas in the traditional and modern system of Sanskrit education, the Government of India is also giving grant to the State Governments for appointment of Teachers for teaching selected modern subjects in the 'Traditional Sanskrit pathshalas'. States of Uttar Pradesh and Gujarat are receiving grants under this scheme.

(c) for providing facilities for teaching Sanskrit in High and Higher Secondary Schools, Government of India has taken steps to abridge the gap by giving 100 per cent Grant towards salary of Sanskrit Teachers to be appointed in such High and Higher Secondary Schools where the State Governments are not in a position to provide facilities to teach Sanskrit. Karnataka and Nagaland are availing the assistance. (d) Scholarships to students studying Sanskrit in High and Higher Secondary Schools—in order to attract good students to the study of Sanskrit the High and Higher Secondary Schools, Merit Scholarships are given to the Sanskrit Students in IX to XII Classes. The rate of scholarship has been enhanced from 1990-91 to Rs 25 per month for IX & X Classes and Rs 35 per month for XI & XII classes. About 3,000 Students are benefitted every year. (e) Grant to the state governments for their own schemes for promotion of Sanskrit—under this scheme, state government are expected to chalk-out their own programmes for development and propagation of Sanskrit like upgrading the salary of teachers, honouring of Vedic Scholars, conducting Vidwat Sabha, holding of evening classes for Sanskrit celebrating Kalidasa Samaroh, etc.

PRODUCTION OF SANSKRIT LITERATURE

Under this scheme of Production of Sanskrit Literature, the Government Assistance is given for (i) printing and publication of original works relating to Sanskrit Literature, (ii) printing of out-of-print Sanskrit Books (iii) purchase of Sanskrit Publications from Authors and Publishers for free distribution to various institutions, (iv) Sanskrit Journals to improve their quality and contents, and (v) preparation and publication of Descriptive Catalogue of Sanskrit Manuscripts and Publishing Critical Editions of Sanskrit Manuscripts.

During 1990-91 (upto the end of December, 1990), 26 publications have been brought out with this assistance. About 20 more publications are expected to be brought out shortly. *Besides this, Dharma Kosha Mandala, Wai, which is engaged on the work of preparation and publication of Dharam Kosha, an encyclopaedia of ancient Sanskrit literature, has received a sizeable amount of grant from the Government of India during 1990-91.* All India Kashiraj Trust, Varanasi, is engaged in bringing out Hindi Translations, English Translation and Critical Edition of all the *Mahapuranas* with the Government Assistance.

About 34 journals are being assisted by the Government of India by extending a grant ranging from Rs 1250 to Rs 12,500 per annum to improve their quality and contents. The Government has also purchased about 250 books from individuals and publishers for free distribution to various institutions. Two Catalogues/Critical Editions of Manuscripts have been brought out in 1990-91. One more Catalogue/Critical Edition is expected to be published. Besides,a massive programme for bringing out Photo Offest Reproduction of Import out-of-print Sanskrit Books has also been undertaken with a view to make them available at low-price to the readers. About 30 books are under reprint during 1990-91.

PRESERVATION OF ORAL/TRADITION OF VEDIC STUDIES

As a special incentive to preserve the Oral Tradition of Vedic studies, A Scheme was introduced during 1978 under which *each Swadyayain* is expected to train two students each below the age of twelve. During 1990-91, 14 such units are receiving assistance. Under this scheme, the scholar is given An Honorarium of Rs 1250 per month and the student Stipend of Rs 175 per month.

In order to locate and identify the areas and families where the Oral Vedic Tradition is still alive, the Ministry of Human Resource Development holds A Vedic Convention every year for which scholars from All Over India are invited. In 1990, The Vedic Convention was organised in Kotdwar. Besides this, Five Regional Vedic Conventions are also to be organised in various parts of India.

Rashtriya Vedu Vidya Pratishthan was set up in 1987 for undertaking various activities including support to the Traditional Vedic Institutions and scholars, providing scholarships/fellowships, etc., for promotion of Oral Traditions of Vedic Studies.

Vocational Training Courses for products of Sanskrit Pathshalas Scheme aims at generating employment opportunities for the students who pass out of Kendriya Sanskrit Vidyapeethas, Adarsh Sanskrit Mahavidalaya and other traditional Sanksrit Institutions. It provides for Short-term Vocational Training to those students in subject allied to Sanskrit Studies, namely, Epigraphy, Manuscriptology, Rituology, Sanskrit Printing and Composing, etc. Registered Voluntary Organisations in the Country receive 100 per cent grant for conducting these courses. During 1990-91, about 14 such courses are being conducted.

CULTURAL EXCHANGE PROGRAMME

Cultural agreements are made between India and other countries to receive foreign scholars and to send Indian scholars abroad.

6 Cultural Activities

COMPOSITE culture of India is essentially an expression of inner urges and cumulative beliefs of people gathered through centuries of experience. It is the perennial flow of this cultural stream which determines the nation's strength, character and capacity to survive as an integrated living reality despite heavy odds and is continuous march forward on the path of progress. Keeping this in view, preservation of cultural heritage, inculcation of art consciousness among people and promotion of high-standards of creative and performing arts and dissemination of culture have been made part of the objectives of the State Policy.

The Central and State Governments strive for promotion and dissemination of art and culture through National and Regional Academies of art, dance, drama, music and letters. Zonal Cultural Centres have been set up for projecting, preserving and sustaining cultural kinship that transcends territorial limits. In addition, Indira Gandhi National Centre for Arts has been set-up at New Delhi as a 'resource centre and data base'. All these institutions and Departments of Art and Culture are helped in their objective by Media and Voluntary Agencies. Apart from this, some eminent persons in the field of Fine Arts are nominated by the President to the Rajya Sabha.

VISUAL ARTS

PAINTING

Important traditions of Indian Painting include the Murals of Ajanta, Ellora and other frescoes, Buddhist Palm Leaf Manuscripts, Jain Texts, Deccan, Mughal, Rajput and Kangra Schools. Bengal Renaissance and modern trends bring it to the present. Modern trends in Europe and elsewhere have influenced Modern Indian Painting. Indian Folk Art and themes have been successfully revived and accepted.

LALIT KALA AKADEMI

To promote and propogate the understanding of Indian Art, both within and outside the Country, the Government of India established Lalit Kala Akademi (National Academy of Fine Arts)—an autonomous National Organisation with its headquarters at New Delhi and with the financial support by the Government. The akademi at the Regional, National and International Level strives to achieve this objective by organising exhibitions, seminars, workshops and camps and also by bringing out suitable publications on both contemporary Indian Art.

To decentralise its activities, the akademi has now set up regional centres called *Rashtriya Lalit Kala Kendra* at Lucknow, Calcutta, Madras and Bhubaneswar. The akademi has also set up Community Artists Studios Complex with Workshop Facilities in such disciplines as Painting, Sculpture, Print-making and Ceramics in the Garhi Village at New Delhi. The workshops at Garhi Complex and all Regional centres are headed by experts who are available to give technical guidance and expertise in these disciplines.

Since almost from its inception, the akademi organises the National Exhibition of Contemporary Indian Art every year with Ten National Awards of Rs 10,000 each. It also organises Three to Four Special Exhibitions every year in some concept involving the known and eminent artists of India. These exhibitions, though normally organised at the galleries of its headquarters in New Delhi, now are also being presented at other Centres of India. The akademi also organises Triennale-India, the most significant International Exhibition of Contemporary Art in this part of the World every three years. *The last Seventh Triennale was held in 1991.* Alongwith the Triennale-India, the akademi also organises a *Rashtriya Kala Mela* (*National Art Fair*) where artists from all over India present there work. The last Fourth *Rashtriya Kala Mela* was held in February, 1991.

The akademi also honours eminent artists and art historians every year by electing them fellow of the akademi. So far, 41 Artists and Art Historians have been conferred with this fellowship.

To propogate Indian Art outside, the akademi regularly participates in International Biennales/ Triennales and abroad and organises Exhibitions of Works of Art from other Countries. Also to folster contacts with the artists of other Countries, the akademi also sponsors exchange of artists with other Countries from time to time under the Cultural Exchange Programme of the Government of India.

The Lalit Kala Akademi, in order to promote art activities in the Country, gives recognition to art associations and extend financial assistance every year to these bodies for specific programmes. It also gives similar assistance to the State Akademies. The akademi also gives scholarship to deserving young artists every year to work in the workshops of its Regional Centres/Garhi Studios in every discipline with the facilities available free of cost.

It also has a regular publication programme. It brings out monographs on the works of Contemporary Indian Artists in English and Hindi and Books on Indian Art-Contemporary, Traditional, Folk and Tribal-authored by eminent writers and art critics besides seminar papers, illustrated catalogues of important exhibitions, portfolios of paintings. It also publishes Bi-annual Art Journals-*Lalit Kala* Contemporary and *Lalit Kala* Ancient in English and *Samkaleen Kala* in Hindi. Apart from these, the akademi brings out large-size multi-colour reproductions of Contemporary Paintings and Graphics from time to time.

The akademi has started a regular programme on research and documentation of contemporary, folk, tribal and traditional arts of the Country. Scholars are given financial assistance to carry out projects in these fields.

It has been able to build up an Artists-Aid-Fund to give financial assistance to ailing artists.

The Lalit Kala Akademi has a well-equipped specialised Art Reference Library and Archives and its own permanent collection of the Works of Contemporary Indian and Foreign Artists.

PERFORMING ARTS

MUSIC

Two main schools of classical music *Hindustani* and *Carnatic* continue to survive through oral tradition being passed on by teacher to disciple. This has led to the existence of family traditions called *gharanas* and *sampradayas.*

Patronage to music is both state-supported and popular. Sangeet Natak Akademi, All India Radio, Doordarshan, films, voluntary organisations and cultural associations are the main agencies contributing to the Nation-wide Awareness and appreciation of music. In recent years, there has been a great revival of interest in folk and tribal music. It has been staged in various cities. Another category of music, known as light music, is gaining popularity.

DANCE

Dance in India has an unbroken tradition of over 2,000 years. Its themes are derived from mythology, legends and classical literature, *two main divisions being classical and folk.* Classical Dance forms are based on ancient dance discipline and have rigid rules of presentation.

Important among them are *Bharat Natyam, Kathakali, Kathak, Manipuri, Kuchipudi* and *Odissi. Bharat Natyam* has roots in Tamil Nadu. *Kathakali* is a dance drama of Kerala and *Kathak* is principal classical dance of North India revitalised as a result of the fusion of Mughal Influence with Indian Culture. Manipur has contributed a delicate, lyrical style of dance, *Manipuri. Kuchipudi* is a dance-drama from Andhra Pradesh. Its themes are called from *Ramayanna* and *Mahabharata. Odissi* from Orissa, once practised as a temple dance, is today widely interpreted by artists. Folk and Tribal Dances of India are of numerous patterns.

Both the Classical and Folk Dances owe their present popularity to institutions like Sangeet Natak Akademi and training institutes and cultural organisations. The akademi gives financial assistance to cultural institutions and awards fellowships to scholars, performers and teachers to promote advanced study and training in different forms of dance and music, especially those which are rare.

THEATRE

Theatre in India is as old as her music and dance. Classical Theatre survives only in some places. Folk Theatre can be seen in its regional variants practically in every linguistic region. There is also Professional Theatre, mainly city-oriented. Besides, India has a rich tradition of Puppet Theatre prevalent form being Puppets, Rod Puppets, Glove Puppets and Leather Puppets (Shadow Theatre).

There are several semi-professional and amateur theatre groups involved in staging plays in Indian Languages and English.

SANGEET NATAK AKADEMI

Sangeet Natak Akademi, the National Academi of music, dance and drama, was set-up in 1953 to promote the performing arts in collaboration with states and voluntary organisations. It seeks increased public appreciation of these art forms through sponsorship, research and dissemination. It holds seminars and festivals, presents awards to outstanding performing artistes, gives financial assistance for theatre productions, extends financial help to traditional teachers and grants scholarships to students. It operates a scheme of inter-state exchange of troupes to promote National and Cultural Integration through Regional Festivals and bringing rare art forms of the regions to the fore.

The akademi has set-up a special unit for surveying and documenting various theatrical musical and dance forms in the country. Its disc and tape library has the largest collection of Indian Classical, Folk and Tribal Music and Dance and Theatre Items.

The Sangeet Natak Akademi runs two National Institutions for training in dance-*Kathak Kendra,* New Delhi and Jawaharlal Nehru Manipur Dance Academy, Imphal. It helps in promoting Puppet Theatre. It gives subsidy for publication of books in various Indian Languages and English on Music, Dance and Drama. It also honours outstanding performing artistes and schools by conferring fellowships and annual awards.

NATIONAL SCHOOL OF DRAMA

The National School of Drama, a premier theatre institution, was established in 1959 by the Sangeet Natak Akademi. In 1975, the school was registered as an autonomous institution, fully financed by the Government. It imparts training in Dramatics and is Propagating Theatre in the Country. The school has been teaching the theory and practice of drama in a scientific way to talented and enthusiastic young students. It has directly and indirectly played a constructive role in improving the overall standard of plays being produced and techniques being used therefor. The National School of Drama has also gone to the regions for organising theatre workshops and children's theatre training courses so as to make available training facilities to local theatre enthusiasts and to initiate training of its students in folk, traditional and regional theatre forms. Under its three-year training programme, it awards scholarships to the students and also provides One-year Fellowships. It imparts training in theatre and contributes to the development of Indian Theatre by training actors, directors and stage technicians. It is conducting a Three-year Diploma Course and provides advanced theatre training in Dramatic Literature, Stage Craft and Production.

The Repertory Company, attached to the school, performs World Classics as well as Contemporary Indian and Western plays. Apart from performances in Delhi, it tours other parts of the Country also.

The National School of Drama has started a Theatre-in-Education Company of adults playing for children, a new concept of 'Meaningful Theatre for Children'. It also conducts Children's Theatre Workshops during the summer vacations.

LITERATURE

Rediscovery of the Ancient and Medieval Indian Literature and development of Modern Literature in major Indian Languages and English mark literary activities in present-day India. A large number of literary periodicals and magazines, literary institutions and All India Radio have given impetus to the growth of Modern Indian Literature.

SAHITYA AKADEMI, NEW DELHI

The Sahitya Akademi was set up by the Government of India on 12 March, 1954, as a National Organisation to work actively for the development of Indian Letters and to set high-literary standards to foster and coordinate literary motivation in all the Indian Languages and to promote through them the cultural unity of the Country. The akademi has recognised languages in which its programmes are implemented. They include 15 languages enumerated in the Constitution of India and English, Manipuri, Dogri, Rajasthani, Konkani and Nepali.

The main activities of the Sahitya Akademi are: popularising writers and language-literature beyond their language boundaries through translation, declaring literary awards to books of outstanding literary merit, prizes for translations and offering fellowship honours, assessing literary trends and encouraging experiments in the Indian Languages through its journals, encouraging younger generation of writers through its various workshops, grants to authors and other schemes.

The akademi has Three Regional Offices at Bombay, Calcutta and Madras which look after the programme in the languages of the respective regions.

The Sahitya Akademi published 83 books in various Indian Languages and reprinted 35 titles. The Fourth Volume of Encyclopaedia of Indian Literature is in press and is likely to be published soon. The akademi participated in 18 book exhibitions, organised 12 seminars and Six 'Meet the Author' on literary books they enjoyed most in their career. Twenty-Eight Literary Forum Meetings were also held during the period and Five Workshops on Literary Translations were organised.

It maintains a Library-cum-reading Room at Rabindra Bhavan, New Delhi, with about 80,000 books. Small Reference Libraries also function at its Three Regional Offices at Bombay, Calcutta and Madras.

It has also instituted prizes for translation of various works in 22 languages, beginning from 1989-90.

In the International Literary World, the akademi cooperates with UNESCO and participates in the Cultural Exchange Programmes of the Government of India on bilateral basis with other Countries.

FELLOWSHIP AND FINANCIAL ASSISTANCE

To provide basic financial support to outstanding persons for creative work in various fields of the Performing, Plastic and Literary Arts in the age group 25-65, 15 Senior Fellowships and 35 Junior Fellowships of the value of Rs 1,000 and Rs 500 respectively per month, each tenable for two years, are awarded every year since 1979-80. The number of Senior Fellowhips has been increased to 30 and that of Junior Fellowships to 75 from 1988-89. These Fellowhips are given for specified schemes and projects suggested either by the artistes themselves or selected at the initiative of the Government.

Ten eminent artistes who have achived high-degree of excellence and have acquired National/International Fame but have since retired from professions are Awarded Fellowships of the value of Rs 2,000 per year for continuing experiments in the fields of Performing, Literary and Plastic Arts.

Persons distinguished in Letters, Arts and such otherwalks of life, who are above 58 years of age and have an income of less than Rs 1,000 a month, are considered for grant of financial assistance upto Rs 600 a month. Young artistes of outstanding promise, in the age group 18-28, are awarded 150 scholarships every year for advanced training in music, classical forms of Indian Dances, Traditional Theatre, drama, painting and sculpture. A scholar gets Rs 400 a month for two years.

The Sangeet Natak Akademi selects candidates for Performing Arts and the Lalit Kala Akademi for Plastic Arts.

ARCHAEOLOGY

The Archaeological Survey of India, (ASI), founded in 1861, is the leading institution in the field of archaeological research activities. It conducts programmes of large-scale problem oriented exploration and excavation of pre-historic, protohistoric and other ancient sites, as also the architectural surveys, landscaping around monuments, conservation and chemical preservation of monuments, sculptures and museum objects, epigraphical research, maintenance of Archaeological Museums located near ancient sites and remains and monuments, publication of archaeological and epigraphical periodicals and memoirs, etc. It also carried out preservation work of monuments and sites Abroad.

The landmark of the Indian Archaeology is the discovery of the Indus

Valley Civilization in 1921, after the Partition on India in 1947, practically all the Harappan Sites went over to Pakistan but the systematic work of the Archaeological Survey of India made it possible to discover many Harappan Sites along the river bed of the Saraswati and the Western Coast of India. The most important sites excavated since 1947 include Lothal, Kalibangan, Ropar, Surkotada, Banawali, Hulas, Daimabad and Dholavira, besides, scores of other sites in the Country belonging to different periods. The Northern Limit of the Harappan Culture is Manda in Jammu and Kashmir and the Southern Limit is Daimabad in Maharashtra.

The Indian Archaeologists could bridge the gap once known as the 'Dark Period of Indian history', through the discovery of the Neolithic and Chalcolithic Cultures in different parts of India. The notable sites include Gufkral, Burzahom, Mahagara, Chopanimando, Koldihwa, Brahmagiri, Banahalli, Inamgaon, Kayatha, Nagda, Sanghol, Sringverpura, Hastinapur, Atranjikhera, Bhagwanpur, Jakhera and Mathura, etc. As a result of the effort of the Archaeological Survey of India , much new data have been brought to light pertaining to later periods.

The important sites excavated recently included Harshaka-Tila at Thanesar in Haryana exposing a cultural sequence from the Kushan Period to Medieval Periods; Adam in Maharashtra revealing a historical rampart of Satavahana Times dating back to the Early Centuries of the Christan Era; Dholavira in Gujarat unveiling a town planning of Harappan Period with earlist evidence of pillared construction; Lalitagiri in Orissa yielding Buddhist Relics of Post-Gupta Period and a seal reading *Puspagiri Mahavihara;* Barabati in Orissa, exposing medieval structural remains; Sanghol in Punjab bringing to a light sequence of cultures from Proto-historic Period to Gupta Age with interesting structural remains of *Kushan* Times; Gudnapur in Karnataka revealing remains of a place and a *Mandapa* of Pre-Medieval Period; and Kolhua (Vajatidi) in Bihar bearing evidence of Gupta and Post-Gupta Times.

Ancient remains and archaeological monuments numbering more than 5,000 which are protected under the law as monuments of National Importance are looked after by the Archaeological Survey of India while those not of National Importance are maintained by the states. The key preservation works undertaken by the Archaeological Survey of India during the period included Kudvali Sangamesvara Temple at Alampur, Papanansi Group of Temples, Charminar at Hyderabad, Katesvarvaralayam Temple and Devi Shrine at Palampet and Buddhist Mahastupe at Amaravati in Andhra Pradesh; Sibdol at Sibsagar and monuments at Joysagar in Assam; Monastery one to six at Nalanda and ancient site at Kumrahar in Bihar; Sidi Saiyad Masjid at Ahmedabad, Sun Temple at Modhera and Kavada Masjid at Champaner in Gujarat; Sheikh Chilli's Tomb at Thanesar and Mughal Sarai at Gharaunda in Haryana; Buddhist Monasteries at Tabo in Himachal Pradesh; Fort at Ramnagar, Kala Dera Temple two at Babore, Leh Palace, Buddhist Monasteries at Alchi and Stupa at Tesseru in Ladakh, Jammu and Kashmir; Monikesvara Temple at Lakhundi, Group of monuments at Hampi, Vitthala Temple at Belur and group of monuments at Aihole and Helebid in Karnataka; Bagh Caves at Dhar, Kantideul Temple at Ratnapur. Dantesvari Temple at Danteweda, monuments at Chanderi and Chausath Yogini Temple at Khajuraho. Tomb of Mohammed Ghaus and Jain Colossi at Gwalior and Jama Masjid and Taveli Mahal at Mandu in Madhya Pradesh; Ajanta Caves, Elephanta Caves, Shivaji Temple and Fort at Chandrapur in Maharashtra; Sun Temple at Konarak, Bakreshvara Temple at Bhubaneswar and Jagannath Temple at Purin in Orissa; forts at Bharatpur, Jaisalmer and Chittaorgarh in Rajasthan; Piravathanesvara Temple at Kanchipuram, Sri Jalakanthesvara Temple at Vellore and Kalyana Mahal at Gingee in Tamil Nadu; Taj Mahal, Agra Fort, Tomb of Itimad-ud-Daula, Akbar's Tomb at Sikandra, Sheikh Salim Chisti's Dargah at Fatehpur Sikri in Uttar Pradesh; and Monuments at Murshidabad and Bishnupur in West Bengal. Besides the above works, the Archaelogical Survey of India has also undertaken the conservation works of unprotected monuments viz., Buddhist Monasteries at Twang in Arunachal Pradesh and Jama Masjid at Delhi. Potwon-Ki-Haveli at Jaisalmer in Rajasthan and Raza Library at Rampur in Uttar Pradesh.

The chemical preservation of monuments included Amritesvara Temple at Amritpur, Mahadevesvar Temple at Banvasi in Karnataka; Shore Temple at Mahabalipuram in Tamil Nadu; Lakhana Devi Temple at Bharmour in Himachal Pradesh; Imam Bara at Lucknow in Uttar Pradesh; Roshanara Baradari in Delhi; and Vaman Temple at Khajuraho in Madhya Pradesh. One of the best examples of salvage operations in the detachment of murals of the Seventh-Eighth Century of Cave No. Four Bagh Caves and remounting them on flexible plastic support reinforced with Fibre Glass.

The ASI continued the conservation work at Angkor Vat in Kampuchea for the fourth season. The work is proposed to be continued next year as well. The work of setting-up the Armed Forces Museum at Luanda in Angola was taken up and completed by the Indian Team lately.

The task of implementation of Ancient Monuments and Archaeological Sites and Remains Act, 1958 and the Antiquities and Art Treasure Act, 1972, is also carried out by the ASI. Under the Antiquities and Art Treasure Act, 1972, any object which is over 100 years old (75 years in case of manuscripts, documents and the like) having artistic and archaeological interest cannot be exported without a valid permit from the Archaeological Survey of India. A permit is also required for the export of works of art of some of the renowned artists which have been declared as 'Art Treasures' under the act. At all International Exit Points, an Expert Advisory Committee functions to issue 'Non-Antiquity Certificates'. The scheme of registration of sculptures and paintings besides illustrated, painted or illuminated manuscripts which are over 100 years old, is also in operation. The act also requires that the trade in antiquities is to be carried out by persons duly licensed by the Licensing Officers of the Archaeological Survey of India. As per the provisions of the Ancient Monuments and Archaeological Sites and Remains Act, 1958, permission is required for filming and photographing with stands at Centrally Protected Monuments and Museums and no archaeological excavation can be carried out anywhere in India without a license issued by the Director General, Archaeological Survey of India.

The Archaeological Survey of India also maintains 31 Site Museums which are located near the ancient sites and monuments. The aim of organising the Site Museums is to propagate the cultural activities of that particular locality.

The ASI conducts a Two Year Post-graduate Diploma Course in Archaeology at the Institute of Archaeology located in Delhi which has attracted students from India and also other neighbouring countries. Besides the research programmes, the institute has short-term courses in conservation and epigraphy. Many of the universities have introduced teaching of archaeology at the Post-graduate Level.

The Publication Wing of the ASI has brought out number of publications under Memoirs and Architectural Survey Series and Indian Archaeology 1985-86—A Review, guide books and coloured picture postcards of different monuments and sites.

Its Central Library is one of the oldest in the country. It contains rare books and journals not only on India but also on South-East Asia and West Asia. There is a separate library of photographs apart from a study collection of Ancient Ceramics and Coins of Indo-Pak Sub-continent.

MARINE ARCHAEOLOGY

Marine Archaeology Unit was set up in the National Institute of Oceanography. Goa, with a view to exploring and excavating submerged ports and sunken ships. The project, supported by the Department of Science and Technology, undertook off-shore survey of Legendary City of Dwarka on Gujarat coast, supposed to have been built by Sri Krishna and, subsequently, submerged under the sea. Underwater excavation in the ancient harbour seaward of Temple of Sea God *(Samudranarayana)* brought to light a submerged structure of massive building blocks corroborating the findings of onshore excavation in which three temples (1st-9th century AD) and two townships (10th and 15th century BC) were found destroyed by sea. Offshore exploration of Bet Dwarka, an island settlement off Port Okha, associated with Sri Krishna's Legend, yielded conclusive evidence of the submergence of a 14th-15th Century BC Town. A massive wall *in situ in* 3.6 metre water depth at high-tide is found built on a wave-cut bench. Among important proto-historic antiquities recovered from underwater excavation, mention may be made of a Unique Late Indus Valley Seal and an 'inscribed jar mentioning Sea God and seeking his protection.'

Further excavation 600 m-seaward of Dwarka brought to light a submerged stone-built jetty and triangular stone anchors with three holes closely resembling those found in Ugarit (Syria) and Kition (Cyprus) is 1300 BC level; Dwarka Anchors also belong to the same period. Ancient city of Dwarka is found to have extended over two km up to Rupen. *City of Bet*

Dwarka (Shankhodara) was four km long as attested by the submerged walls in Situ near Balapur Bay. It is now obvious that the Second Urbanisation in India took place during the 14th-15th Century BC, a thousand years before the Achaemenid Cities came into existence. Iron objects found in Bet Dwarka Waters indicate that the Iron Technology was in a primitive stage.

Excavation in the Arabian Sea, 700 m seaward of the temple of Sea God, brought to light remnants of fortification walls and bastion built of Massive Limestone Blocks confirming thereby that the Ancient City of Dwarka was fortified as described in Mahabharata. It is termed a *Varidurga* (a fortress in water). The submerged structures are *in situ* at 6.14 m below mean sea-level and the ancient sea-level must have been 9 m below the present one. The Thermoluminiscence Date of Pottery from the section of the wall is 3,520 years before present. This date corroborating the archaeological evidence fixes the date of Mahabharata also.

Marine records of state and National Archives were examined and particulars of 200 shipwrecks in Indian Waters were noted. Among them, 30 wrecks are of historical significance. It is proposed to explore and excavate a couple of them. Shipwrecks in Sri Lanka, Mauritius and in Malaysian Waters also find mention in these records. The twin objective of the Marine Archaeological Investigations is to reconstruct the history of the maritime trade, ship-building and cultural migrations and to furnish data useful to Sedimentologists and naval architects in dating the samples and ascertaining the coastal erosion.

Marine Archaeology Unit discovered a shipwreck four km off Marmugao Harbour in Goa. This Steel-hulled Ship, about 32 m long, is covered by sediment and efforts are being made to identify and excavate the vessel lying buried in 1.5 m thick sediment.

While the Marine Archaeology has given a new dimension to Oceanography, the discovery of the Legendary City of Dwarka has added a new chapter to the Indian History. Data on sea-level fluctuation generated by Marine Archaeology is useful for eustatic studies.

MUSEUMS

Museums are repositories of cultural-historical, technical industrial and other kinds of material for preservation against decay and held in trust for posterity and records of history. They also serve as important audio-visual means of education.

TRAINING IN MUSEOLOGY

Regular Degree and Diploma Courses in Museology are being conducted by the University of Aligarh, Vadodara, Bhopal, Calcutta, Pilani and Varanasi. Besides, National Institute of History of Art, Conservation and Museology has been set up to provide for various courses of study, training and research in different branches of History of Art, Museology, Archaeology, Primitive Art, Archival Studies and conservation of cultural property, etc. The Government organises annually museum camps at different places. The Government also awards Fellowships for training in India and abroad. National Museum, New Delhi, in conjuction with the National Gallery of Modern Art/Victoria Memorial Hall and National Research Laboratory for Conservation of Cultural Property has taken up a project in restoration and preservation of art works of Non-Indian Orgin.

NATIONAL COUNCIL OF SCIENCE MUSEUM (NCSM), CALCUTTA

The National Council of Science Museum (NCSM), Calcutta, was set up in April, 1987, as an autonomous organisation for popularisation of science through the then existing Science Museums in India viz. Birla Industrial and Technological Museum (BITM), Calcutta, Visvesvaraya Industrial and Technological Museum (VITM), Bangalore and Nehru Science Centre, Bombay. It was also given the task of setting-up a chain of Science Museums and Centres of various levels at different places. Within a decade, Science Museums and centres came up at Purulia, Gulbarga, Dharampur, Tirunalveli, Patna and Bombay. Two Regional Science Centres at Bhubaneswar and Lucknow were set up in September 1989. Two such centres at Guwahati and Nagpur and National Science Centre in Delhi have also been completed.

Three more Regional Science Centres at Bhopal, Calicut and Tirupati and One Sub-regional Science Centre at Burdwan are under establishment. Plans are a foot for setting-up New Centres at Imphal, Goa, Vijayawada, Palampur (HP), etc. NCSM has set up a Central Research and Training Laboratory (CRTL) for research and development of exhibits prototypes and training of museum personnel in all disciplines. The council, through its constituent units, regularly conducts multifarious educational activities for children, students, teachers, rural people, housewives and unemployed youth.

The National Council of Science Museum, Calcutta, took part in Festival of India in USA (1985-87) and in USSR (1987-88) with 'Travelling Science Exhibitions' which were a tremendous success in both the countries. Another travelling exhibition "India-A Glimpse of Science" has been sent on a tour to Europe. It was opened at *Palais de le Decouvarte in Paris* in the first week of November, 1990. It is scheduled to remain there upto May, 1991, before travelling to other countries in Europe in the subsequent years.

UP-KEEP OF MUSEUMS

The Constitution makes states primarily responsible for setting-up and maintenance of museums. Central Government has, however, set-up a number of important museums and provides financial assistance for the development of private museums, university museums, etc. Great emphasis is laid on documentation of existing collection in Government and Private

Museums, preservation of collection using lastest scientific aids and publication of catalogues of collections.

In the field of Indian Art and Archaeology, the Government has established National Museum, New Delhi; Indian Museum, Calcutta and Salar Jung Museum, Hyderabad. Besides, Allahabad has also been taken over from Allahabad Municipal Corporation since 29 April, 1986. In Contemporary History and Art, Victoria Memorial Hall, Calcutta, National Gallery of Modern Art, New Delhi and Nehru Memorial Museum and Library, New Delhi, are the three museums financed by the Government.

The National Museum, established in 1948, is one of the premier museums and its main activities are in the field of acquisition, exhibition, conservation, publication and education. The Indian Museum, the first museum of the Country established in 1814, is the most illustrious Art and Archaeology Museum. An audio-visual programme was arranged in connection with the Centenary Celebration of the City of Calcutta in the museum lately. The Salar Jung Museum, Bombay, continued its activity of collection of art objects and purchased 52 art objects of various categories, in addition to providing facilities for research, educational activities, free-guided tours, lectures, film shows, temporary periodical exhibitions, reorganisation of galleries on modern scientific lines, physical verification of art objects, seminars, symposium, publication, conservation of art objects, etc. It has more than 7,500 manuscripts in Persian, Arabic and Urdu.

There are at present 400 museums in the Country managed by different agencies. Important among them are: Indian War Memorial and Archaeological Museum at Red Fort, National Museum of Natural History, Crafts Museum and Rail Transport Museum, all in New Delhi, Asutosh Museum, Calcutta, State Museum, Hyderabad; Prince of Wales Museum of Western India, Bombay; Government Museum, Madras, Bharat Kala Bhawan, Varanasi; State Museum, Lucknow; and Calico Textile Museum, Ahmedabad. There are Archaeological Museums at ancient sites like Konark, Amaravati, Nagarujnakonda, Sanchi, Nalanda, Sarnath, etc. There are also museums of dolls, textile design and for children in places like Delhi, Ahmedabad and Lucknow.

To promote dissemination of culture through museums, various programmes have been launched by each Central Museum. This includes extension of their educational activities and organising periodical lectures and exhibition to make people aware of their cultural heritage. A new scheme has been launched by the Department of Culture under which museums are invited to organise on reciprocal basis exhibitions of their art treasures. The department gives financial assistance to cover insurance, transportation, etc., of their 'art treasures.'

NATIONAL ARCHIVES OF INDIA

The National Archives of India, known till Independence under the name of Imperial Record Department, was established in 1891. It is the largest and perhaps the best organised record repository in Asia, with its holdings running over 30 Kilometres of linear-shelf space. It has three Regional Repositories-one each at Bhopal, Jaipur and Pondicherry. The major activities of the archives include: i) accessioning of public records and making such records accessible to various Government Agencies and research scholars; ii) preparation of Reference Media for the use of research scholars; iii) preservation and maintenance of records and conducting of scientific investigations for the said purpose; iv) evolving and keeping-up records management programmes; v) rendering technical assistance to outside agencies in the field; and vi) creation and promotion of archival consciousness in the Country by celebrating 'Archives Week' every year.

During November 1989-October 1990, 8,880 visits were made by the scholars to the Research Room of the Archives and 132 queries on records received from outside agencies seeking information from amongst the record holdings of the archives were attended to.

The significant accessions amongst the public records were Reports of the Committees on Re-organisation of Army and Air Force in India (1944-45), Treaties and agreements relating to the development of Telecommunication Links between India and Different Countries, Micro-film Rolls of 'Panda Records' containing 'Pilgrimage Registers' (in the form of *Banis* pertaining to different states of the country, etc.

The Indian Historical Records Commission functions as an advisory body to the Government of India in matters relating to archives and for which the National Archives of India acts as its secretariat. The commission held its 53rd session at Guwahati on 4-5 February, 1990.

The archives provides financial assistance to various archives repositories in the Country for their proper development as also to voluntary organisations and custodial institutions in the Country for preservation of manuscripts in their custody. Further, to unearth records of National Importance lying scattered throughout the Country in private custody, the National Archives of India extends financial assistance to various Archival Repositories/Regional Records Survey Committees in the Country. Under these schemes, the assistance granted during November 1989-October 1990 is respectively as follows:

Name of the Scheme	Grant-in-aid disbursed	No. of Agencies
1. Scheme of financial assistance for the preservation of manuscripts.	Rs 30,03,000	49 Organisations
2. Scheme of financial assistance for development of archives.	Rs 34,74,000	15 State Archives

Name of the Scheme	Grant-in-aid disbursed	No. of Agencies
3. Grant-in-aid under National Register Scheme.	Rs 1,20,000	Eight state archives regional records survey committee.

The Department also brought out the publication entitled *Guide to the Sources of Asian History,* Vol. 3.1. This volume is the first in the series of six volume of *'Guides'* being brought out by the National Archives of India to serve as a major reference media for holdings of Archival Repositories and other custodial institutions in India. Another publication recently brought out is *Asar-i-Azad,* which is a unique collection of Maulana Abul Kalam Azad's writings and notes in Urdu providing outlines and at times almost full drafts of letters and telegrams addressed to various eminent leaders and luminaries. Many other publications were also brought out.

The archives has a School of Archival Studies which imparts training in 'Archives Keeping' and conducts short-term courses as well as awards diplomas. These courses attract students from all over the Country and from Abroad. The archives has regular Cultural Exchange Programme with Several Countries.

It organised an 'Archives Week' from 17-24 November, 1989, to promote archival consciousness among the people.

An exhibition entitled 'Pandit Jawaharlal Nehru—The First Prime Minister of India' was mounted from 16 November 1989 to 14 December 1989. Public records/private papers and rare photographs available in the custody of the archives were displayed on this great personality. A small exhibition entitled 'New Delhi—The Capital City of India' was also organised in November, 1989. Few select documents and photographs on the construction of New Delhi were displayed.

The National Archives of India has initiated a programme of computerising its records holdings to facilitate quick retrieval and to promote inter-disciplinary studies in a big way.

MANUSCRIPT LIBRARIES

KHUDA BAKHSH ORIENTAL PUBLIC LIBRARY

The Khuda Bakhsh Oriental Public Library, Patna, established in 1891, has the richest collection of Arabic and Persian Manuscripts and Mughal/ Rajput Paintings in the Sub-continent besides, over a lakh of rare printed books and periodicals. The library was declared an institution of National Importance in 1969 by an Act of Parliament. Besides, its traditional activities of acquisition and preservation of manuscripts and books, it has descriptively catalogued its manuscripts which is spread over in 35 volumes. It also brings out a quarterly research journal and published critical editions of rare manuscripts like *Diwan-e-Hafiz, Diwan-e-Mushafi, Diwan-e-Mobad,* etc., monographs, lectures, reproductions of rare and nearly extinct periodicals of Urdu. Annual and extension lectures on various disciplines including current-affairs, workshops on related subjects and initiation-Course in Oriental Librarianship and Manuscriptology are its routine activities. In order to accelerate the pace of manuscript-based research, it has started a Five-year Programme of Holding South-Asian Regional Seminars on the relevant subjects of the Library. The library has also created and bestowes Senior, Junior, Visiting and National Fellowships to boost research pursuits. *On the pattern of Jnanpith and Sahitya Academi Awards, a Khuda Bakhsh Award has also been instituted to be given annually to scholars in the concerned disciplines of the library.*

T.M.S.S.M LIBRARY

Thanjavur Maharaja Serfoji's Sarasvati Mahal Library (T.M.S.S.M. Library), Thanjavur, is one of the few Medieval Libraries in the World. It is a 'Majestic Repository of Culture' built up by the successive dynasties of Nayak and Maratha Kings of Tanjore. It was made a Public Library in 1918 by the Madras Government. The library was registered on 9 July, 1986, as a society under the Tamil Nadu Registration Act, 1975. It has a rare and rich collection of manuscripts about 44, 512 in Sanskrit, Marathi, Tamil, Telugu and other languages. More than 35 volumes of descriptive catalogue for these manuscripts were brought out. A number of miniature paintings and colour drawing in its collection are very attractive which reflects the Tanjore School of Painting. Besides, it has 42,753 books in Indian Languages covering various disciplines and rare collection of about 4,500 books in European Languages collected by Raja Serfoji (1798-1832) in his life-time. Few earliest printed books of dictionary, maps and medicines are in this collection. The library is also publishing books and quarterly journal.

RAMPUR RAZA LIBRARY

The Rampur Raza Library is an autonomous body under the Ministry of Human Resource Development, Department of Culture, Government of India and was set-up under the Rampur Raza Library Act, 1975 (No.22 of 1975). The affairs of the library are managed by the Rampur Raza Library Board which has been set-up under Section 4 (1) of the act. It is a High-powered Board of which the Governor of Uttar Pradesh is the Chairman. There is provision for a Vice-Chairman and twelve other members who represent the erstwhile Ruling Family of Rampur, distinguished historians, scholars in Arabic, Persian and Urdu Literature, besides, officials of the Central and State Governments concerned with the affairs of the library.

The library has a collection of about 50,000 printed books, 15,000 manuscripts besides a large number of miniature paintings and *Bhoj Patras*, etc. As the library's collection had never been physically verified earlier, the Rampur Raza Library Board at its meeting held on 13 December, 1986, set-up a committee to ensure stock-taking of the library's holdings. The work of listing of manuscripts, etc., commenced in March, 1987, and was completed in July, 1988.

The Library is housed in 'Hamid Manzil', a palatial building, in the Fort Area of Rampur. The Government of Uttar Pradesh, by a Deed of Grant dated 18 November, 1982, transferred this building alongwith 'Rang Mahal' and adjoining vacant land to the Government of India for the management and maintenance of the Library. These buildings are nearly eighty years old and require extensive repairs/renovations. Repairs to Rang Mahal and to the roof of Hamid Manzil have since been completed.

ASIATIC SOCIETY

Asiatic Society, Calcutta, was founded in 1784 by Sir William Jones (1746-1794), Eminent Indologist, with the objective of inquiring into History, Antiquities, Arts, Science and Literature of Asia. *This institution proved to be the fountain-head of all literary and scientific activities in India and patron of all Asiatic Societies in the World.* The society has a rich collection of rare books, manuscripts, coins, old paintings, inscription and arhival materials. It maintains a museum which includes an *Ashokan Rock Edict*, Copper Plates ranging in date from the Third Century BC to the 18th Century and important documents for the study of Indian History and Culture. The coin collections cover practically the whole range of Indian Numismatics from the earliest issues to the latest. Amongst the important activities of the society is publication of Biblotheca India, which consists of a series of oriental texts in Sanskrit, Arabic, Persian, Bengali, Tibetan and other Asian Languages and their translations.

Some other important manuscript libraries are: Government Oriental Library, Madras; Oriental Research Libraries at Pune and Vadodara; Sanskrit University Library, Varanasi; Visheshwaranand Vedic Research Institute Library, Hoshiarpur and Maulana Azad Aligarh Muslim University Library, Aligarh. In addition, there are over 500 other libraries belonging to the state governments and private agencies which have thousands of manuscripts.

LIBRARIES

Libraries are the keepers of our history and culture. Development of the Library System is an important component of the scheme of Non-formal and Continuing Education. *Constitutionally, the subject 'libraries' is included in the State List.* The Centre has jurisdiction only over libraries established by it and institutions of National Importance as declared by it. There are more than 60,000 libraries in the Country.

NATIONAL LIBRARY

The National Library serves as a Permanent Repository of all reading and information material produced in India as well as printed material written by Indians and concerning India written by foreigners, where-ever published and in whatever language. Under the Delivery of Books Act, the

National Library is entitled to receive one copy of each publication published in the Country. This Library is also a repository of the United National Publications. Throughout the year, it renders multi-faceted services and extends different types of biblographical and personal assistance to numerous readers and scholars. The reading and leanding services of the Library are open from 9.00 a.m. to 8.00 p.m. on working days and from 9.30 a.m. to 6.00 p.m. on Saturdays, Sundays and holidays for 362 days a year. The lending facility includes Inter-library Loan and International Loan of Books as well as Microfilms/photocopies of reasearch material. One of the major activities of the library is to assist various institutions, ministries/departments, National and International organisations by supplying information required by them.

Over twenty lakh books and, in addition, periodicals, maps, manuscripts, newspapers and microfilm/microfishe totalling several million items are housed in the library. Invaluable and prestigious personal collections like Asutosh Collection, Jadunath Sarkar Collection, Buhar Collection and some others are in the possession of the library. On various occasions, the library holds exhibitions to make the reading public acquainted with its treasure. Lectures, workshops and National/International Seminars are also arranged to enlighten the staff members and interested public about the development of library services. To modernise the library services, a mini-computer HP 3000/37 MICROXE has been installed and an acquisition data-base named ACQN has been created. Besides publishing the catalogoues of its holdings, the library also brings out books and bibliographies. Library's quarterly publication 'The National Library Newsletters' throws light on the current activities of the library. Library's bibliography programme aims at publishing 'Bibliography of Indology' in 56 volumes and the 'tagore Bibliography' in four volumes.

The Central Reference Library, Calcutta, is responsible for the compilation, publication and sale of the *Indian National Bibliography*. This is a monthly/annual bibliography containing the entries of the Current Indian Publications in Major Indian Languages and in English received under the Delevery of Books Act, 1954. The library is also compiling and publishing *'Index Indiana'*, an annual index of selected articles appearing in Current Indian Periodicals in Major Indian Languages.

The Delhi Public Library, which was established in 1951 with financial and technical assistance from the UNESCO, has since developed into a Big Metropolitan Public Library System consisting of a Central Library, a Zonal Library, 30 branches/sub-branches and community libraries, a Braille Library, 12 Braille Mobile Service Points, Seven Braille Deposit Stations, 31 Resettlement Colony Libraries and Reading Rooms, Two Hospital Libraries, A Prisoners Library in the Central Jail and a network of Mobile Services Stations serving 66 areas and 21 Deposit Stations in Delhi.

The Raja Rammohan Roy Library Foundation, Calcutta, a non-statutory autonomous body, supports and promotes library services in general and Public Library Services in particular in cooperation with states/UTs and other voluntary agencies in the field.

COPYRIGHT LIBRARIES

Under the Delivery of Books and Newspapers (Public Libraries) Act, 1954, four libraries are entitled to receive a copy of every new book and magazine published in the country. These are the National Library, Calcutta, Central Library, Bombay; Connemara Public Library, Madras and Delhi Public Library, Delhi.

OTHER LIBRARIES

There are also specialised libraries for researchers. Prominent among them are the Indian Council of World Affairs, New Delhi, Indian Statistical Institute, Calcutta; Gokhale Institute, Pune; Theosophical Society, Madras; National Council of Apphled Economic Research, Indian Institute of Public Administration and Central Secretariat Library, all in New Delhi. Apart from these, some of the bigger universities also have sizeable collections.

INSTITUTIONS OF TIBETAN STUDIES

Indian Scholars, many centuries ago, took arduous journeys across the Himalayas to Tibet and with them, they carried Indian Philosophy and thought. Evolution of Tibetan thought and culture was a consequence of this interaction.

After Independence, Buddhist Instititutionss were set-up in India such as School of Buddhist Philosophy, Leh, which was set up in 1959 and now renamed as Central Institute of Buddhist Studies and the Central Institute of Higher Tibetan Studies, Sarnath, near Varanasi. These institutions, fully financed by the Department of Culture, seek to preserve Tibetan Culture and tradition and impart studies in ancient and traditional subjects through a modern university framework. They also conduct research in Tibetan Studies. Government also gives grants to Sikkim Research Institute of Tibetology, Gangtok and Library of Tibetan Works and Archives, Dharmasala. The Institute of Tibetan Studies was established in Varanasi as a wing of *Varanaseya Sanskrit Vishwa Vidyalaya*. It became a fully autonomous organisation in 1977 and was renamed as Central Institute of Higher Tibetan Studies. It was declared deemed to be a University in April, 1988. The institute aims at bringing to light Tibetan Heritage, particularly a body of knowledge of Indian Heritage which was lost to Sanskrit and Pali but was preserved in Tibet.

The Central Institute of Buddhist Studies, Leh, also trains students in Buddhist Philosophy, Literature and Arts. It is affiliated to *Sampurnanand Sanskrit Vishwa Vidyalaya,* Varanasi.

Financial assistance of Rs two lakh per year is provided to Voluntary Buddhist/Tibetan Organisations and including monasteries engaged in propagation and scientific development of Buddhist/Titbetan Culture and tradition and research in relative fields. One hundred and eighty six such institutions were selected for grant of financial assistance during 1990-91.

ANTHROPOLOGY AND ETHNOLOGY

Anthropological Survey of India (An.S.I.), a premier scientific organisation under the Department of Culture, Ministry of Human Resource Development, is committed to the study of human surface both in terms of biology and culture with particular emphasis on tribes and weaker sections of population. It works in collaboration with University Departments of Anthropology, Tribal Research Institutes and other organisations involved in Anthropological Research and in related fields. It disseminates its research findings through publication of books, journals and promotes awareness of our Bio-Cultural Heritage by organising exhibitions and screening films through its chain of museums located in different parts of the Country.

During the Seventh Five - Year Plan Period, the Anthropological Survey of India implemented a massive National Project entitled 'People of India' besides 16 other projects having National Significance. The project 'People of India' was implemented as a crash programme in order to generate brief descriptive Anthropological Profiles of all Indian Communities, the impact of change and development process on them and the linkages that bring them together. The operational aspects of this project have been accomplished and the data so far generated have been released in Diskettes. This study has enabled to identify, locate and write on 4,384 communities including Scheduled Castes, Scheduled Tribes and Backward Classes. The study covered the Entire Nation bringing within the ambit such parts of the Country that had not been Ethnographically Surveyed earlier or where the survey had been perfunctual. The other Seventh Plan Projects which are significant at the National-level having bearing on ecology, women, health, nutrition, Genetics, Folk Culture, peasants laws and such others have been put on operation with the involvement of survey's resources and in collaboration with other academic bodies where it is feasible. The Task Force constituted to publish the material on long- pending project of the survey have almost achieved the target.

Under the Indo-Soviet Cultural Exchange Programme, A Seminar on Ethnicity, People and Caste was organised at Calcutta from 23 to 27 February 1990. Participants of the seminar were the Distinguished Scientists from Soviet Russia besides 25 scholars from different parts of the Country. A team of six members of the Indian Delegation headed by Dr K. S. Singh, Director General, Anthropological Survey of India, visited USSR to attend The Second Indo-Soviet Joint Seminar on Ethnicity. They discussed various issues of mutual academic interest with the scholars in Moscow, Leningard and Taskhent and formulated proposals for future Indo-Soviet Collaborative Academic Venture in this field.,

In order to strengthen collaborative activities, An. S.I. sponsored a National Seminar along with Madras University on Tribes of Andman and Nicobar Islands.

In view of developing intimate contact with the neighbouring populations and for close monitoring of Anthropological Issues, the Anthropological Survey of India had made a move to establish a few Field Stations in Different Parts of the Country. One of such Field Stations has been established at Ranchi.

RASHTRIYA MANAV SANGRAHALAYA

Rashtriya Manav Sangrahalya, Bhopal, an autonomous organisation under the Department of Culture, Government of India, is dedicated to depiction of an integrated story of Humankind. The outstanding feature of the *sangrahalya* is its outdoor complex with thematic open-air exhibitions. The *sangrahalaya* combines research and documentation with dissemination of information through informal mode of education.

The Sangrahalaya is carrying out National Projects of Inventories on Ethnographic Objects and Rock Art and is building up a reserve collection of specimens.

It has developed "Tribal Habitat" an open-air exhibition of dwelling of populations from different parts of the country. They present recreated internal and external environment of habitat.

The sangrahalaya is carrying out points action of research and collection to preserve heritage under programme 'operation salvage'.

CONSERVATION OF CULTURAL PROPERTY

The National Research Labortory for Conservation of Cultural Property (NRLC) is a premier institution of its kind in South of South-East Asia. It was established in 1976 by the Department of Culture, Government of India, to carry out research in the methods of conservation and for providing technical assistance and training to other museums, Archaelogical Departments and related institutions.

NRLC also conducts various training courses and workshops for conservators as well as for curators. From time to time, technical notes, books and booklets related to various problems of conservation are also brought- out for the benefit of other institutions of the country. Organization of seminars and symposia is a regular feature of NRLC for dissemination of knowledge and exchange of views on different aspects of conservation. In order to cater to the needs of far-off places, the National Research Laboratory for Conservation of Cultural Property has planned to establish Regional Conservation Centres in different regions of the Country. One such centre has already been established at Mysore.

PROPAGATION OF CULTURE

The Centre for Cultural Resources and Training (CCRT) was set up in 1979 as an autonomous organization fully financed by the Government. The Centre had taken over the scheme 'Propagation of Culture' which was being implemented by the University of Delhi from 1970 onwards.

The board objective of the Centre is to revitalise the Education System by creating an understanding and awareness among students about the plurality of Regional Cultures on India and integrating this knowledge with the school education. To fulfill its objectives, the Centre organises a number of training programmes for the benefit of students and teachers drawn from schools and teacher educators from states particularly those from rural areas. The main thrust in on linking education with culture and making students aware of the importance of culture in all developmental programmes. The training stresses on the role of Culture in Science and Technology, housing, agriculture, medicine, etc. An important component of training is creating an awareness amongst students and teachers of their role in solving environmental pollution problems and conservation and preservation of the natural and cultural heritage.

The Programme lays emphasis on demonstration of innovative educational techniques in class-room situations. The Centre invites a number of school students to work with teachers to try out methodologies for imparting cultural education. It also organises large Youth Camps in which school students from all over the country meet, work together and learn the value of conservation and protection of India's Rich Heritage.

The Centre is collecting resources in the form of slides, photographs, films and recordings on Indian Arts and Crafts so as to prepare cultural educational material for free distribution to schools. It also produces various other programmes to disseminate knowledge of Indian Culture among the youth and the community.

CCRT implements the Cultural Talent Search Scholarship Scheme, which was taken over from the Department of Culture in 1982. The scheme provides scholarships to outstanding children in the age-group of 10 to 14 years studying, either in recognised schools or belonging to families practising traditional, performing or other arts to develop their talent in various cultural fields particularly in Rare Art Forms. The scholarship continues till the age of 20 years or First Year of University Degree.

The Centre for Cultural Resources and Training also has a full-fledged department for evaluation of teachers work after they have received training at the centre. This evaluation and feedback helps the Centre to improve the content of training programmes and the educational materials on culture being prepared for schools. CCRT trained teachers having taken the initiative to organise programmes for their colleagues in rural areas, bringing to them an understanding of Indias Rich Heritage and enabling them to acquire skills in the Traditional Crafts such as Pottery, Weaving, Fabric Printing, etc.

The Centre has also instituted the CCRT Teachers' Award which is given every year to selected teachers in recognition of the outstanding work done by them in the field of Education and Culture. The selection of teachers for the award is based on review of their performances in disseminating culture in their school and in the community.

ZONAL CULTURAL CENTRES

Zonal Cultural Centres have been conceptualised with the aim of projecting cultural kinships transcending territorial bounds. The idea is to arouse and deepen awareness of the local cultures and how these merge into zonal identities and eventually into the rich diversity of Indias Composite Culture. Besides, these are also intended to document, preserve and to sustain the Vanishing Art Forms and Oral Traditions. The involvement of artists and creative people has been inbuilt in the set-up through a system of autonomous governance.

The Seven Zonal Cultural Centres established under the new scheme are: (i) North-Zone Cultural Centre, Patiala; (ii) Eastern Zone Cultural Centre, Santiniketan; (iii) South Zone Cultural Centre, Thanjavur; (iv) West Zone Cultural Centre, Udaipur; (v) North-Central Zone Cultural Centre-Allahabad; (vi) North-East Zone Cultural Centre, Dimapur; and (vii) South Central Zone Cultural Centre, Nagpur. The participation of states in more than one Zonal Cultural Centre according to their cultural linkage is a special feature of the composition of the different Zonal Centre.

INDIRA GANDHI NATIONAL CENTRE FOR THE ARTS

One of the major achievements in the field of arts and humanities in India has been the establishment of a National Institution of great significance, Indira Gandi National Centre for the Arts (IGNCA) to commemorate the memory of Late Prime Minister, Mrs. Indira Gandhi. This institute launched on 19 November, 1985, as a fully autonomous trust, is visualised as a Centre encompassing the study and experience of all the arts-each for with its own integrity, yet within a dimension of mutual inter-dependence, inter-relatedness with nature, social structure and cosmology. When complete, it will comprise a number of halls including a symphony concert hall, A National Theatre, two museums, building for cultural archives focusing attention on the Rich and Varied Oral Traditions of Asia, a reference library, a fully-automated and integrated computerised system for National Information System and data bank on Arts, Humanities and Social Sciences and a research and publication wing. Once completed, the Centre will be the biggest and The Largest Cultural Complex in the World.

The academic programmes of the Centre are conceived as inter-locked programme of sub-institutions. Each has long-range projects of fundamental importance not only to India but also to Asia and other countries of the Third World.

SUB-INSTITUTIONS

INDIRA GANDHI KALA NIDHI

Indira Gandhi Kala Nidhi will comprise (a) cultural reference library of multi-media collections to serve as a major resource centre for research in Humanities and Arts, (b) a computerised National Information System and Data Bank of Arts, Humanities and Cultural Heritage and (c) Cultural Archives and Multi-media Personal Collections and Artists/Scholars.

INDIRA GANDHI KALA KOSA

Indira Gandhi Kala Kosa will undertake fundamental research and initiate long-term programmes for (a) lexicon on fundamental concepts and inter-disciplinary glossaries/ thesaurus on basic technical terminologies in Arts and Crafts, (b) series of fundamental texts of Indian Arts, (c) series of reprints of critical writing on Indian Arts and (d) a Multi-volume Encyclopaedia of Indian Arts.

INDIRA GANDHI JANAPADA SAMPADA

Indira Gandhi Janapada Sampada seeks to: (a) develop a core collection of material and documentation on Folk and Tribal Arts and Crafts; (b) make multi-media presentation; (c) launch multi-disciplinary life-style studies of tribal communities for evolving alternate models for study of Indian Cultural Phenomenon on its totality and inter-webbing of environment ecological, agricultural, socio-economic, cultural and political parameters; (d) establish a children's theatre, and (e) set-up a conservation laboratory.

INDIRA GANDHI KALADARSHANA

Indira Gandhi Kaladarshana aims at providing a forum for inter-displinary seminars, exhibitions and performance on unified themes and concepts. It wil have three theatres and galleries.

SUTRADHARA

Sutradhara will provide administrative, managerial and organisational support and services to all other such institutions.

A Cultural Reference Library of Multi-media Collections with a Computerised Data Bank has been set up and operationalised. The Centre has received donation of a large personal library of Late National Professor Suniti Kumar Chatterjee and also gifts of libraries of other eminent intellectuals such as Thakur Jaideve Singh, Krishna Kriplani, etc. This library is a unique feature consisting of multi-media documentation including Microfilms/Microfiche of Ancient Indian Manuscripts, audio-visual cassettes, photographs, slides, etc.

The Indira Gandhi National Centre for the Arts library is being strengthened with a long-term target for covering basic material in multiple media such as Microfilming the Manuscript collection of Government Oriental Manuscripts Library (GOML) at Madras, Saraswati Mahal Library at Tanjore, Tribandrum Oriental Library and other repository centres in the country. Indian Missions Abroad have been approached for reprographic documentation of cultural source material with foreign repository institutions like India Office Library, Victorial and Albert Museum, etc. in U.K., Bibliotheque Nationale in France, Berlin and Bonn, Oriental Institution of Soviet Academy of Sciences; photographic/slide collections at Pennsylvania and New York Public Library, etc.

INDIA IN WORLD HERITAGE

The World Heritage Committee, constituted by the UNESCO under the provision of the International Convention for Protection of World Cultural and Natural Heritage, has recommended the inscription of 14 cultural monuments and five natural sites from India in World Heritage list. These are : (a) Cultural Monuments-Ajanta Caves, Ellora Caves, Agra Fort, Taj Mahal, Sun Temple at Konark, churches and convents of Goa, group of monuments at Khajuraho, Mahabalipuram, Hampi, Fatehpur Sikri and Pattadkul, Elephanta Caves and Brihadisvara Temple at Thanjavur, Buddhist Monuments at Sanchi, and (b) Natural Sites-Kaziranga National Park, Manas Wildlife Sanctuary, Keoladeo National Park, Sunderbans National Park and Nanda Devi National Park.

NATIONAL COUNCIL FOR CULTURE

The National Council for Culture (formerly National Council of Arts) was set-up on 19 September, 1983, by the Government for coordination of activities of institutions of Arts, Archaeology, Anthropology, Archives, museums and for providing guidelines for future plans and programmes of various institutions.

CULTURAL RELATIONS

The Department of Culture has been actively pursuing a policy of cultural cooperation with many Countries through a system of bilateral agreements and exchange programmes. While cultural agreements lay down broad principles of cooperation, these are implemented through cultural exchange programmes. At present, India has cultural agreements with 81 Countries and Cultural Exchange Programmes with 59 Countries including the signing of the First Cultural and Educational Exchange Programme with Rawanda in June, 1990.

FESTIVAL OF INDIA

A Festival of India was first held in the United Kingdom in 1982. Its objective was to bring to the Outside World glimpses of India's Cultural Heritage in all its richness and variety. It was also to provide a window to contemporary India. The programmes comprise exhibition, performing arts, cinema and symposia.

Two more Festivals were held in 1985-86, one in France and the other in the United States. Emphasis in France was on Performing Arts and Cinema with a few carefully chosen exhibitions including the first ever exhibiton on Indian Architecture held in a Foreign Country. In the United States, a large number of exhibitions and symposia were organised in addition to performing art events and cinema. A number of organisations sponsored local or associated events under the festival banner. Festival of India covered over 100 cities and 15 crore people through actual events, television and media coverage during the 18-month long exposition.

Festival of India in the USSR and a return Festival of USSR in India were inaugurated on 3 July and 21 November, 1987, respectively. Both the festivals lasting one year were the largest ever, ones in terms of scope and number of participants. They culminated with closing ceremonies on 8 July and 20 November, 1988, respectively. 'India Manifestation' in Sweden in August-September 1987, 'Japan Month' in India in September-October 1987 and a return Festival of India in Japan from 15 April to October 1988, were held.

As a reciprocal measure, Festival of France in India was inaugurated in Bombay on 3 February, 1989, in the presence of the President of France and our Prime Minister. A number of exhibitions, seminars and concerts were organised in Bombay, Delhi, Bangalore, Calcutta, Chandigarh, Bhubneshwar, Guwahati and other places. The grand finale was marked by a scintillating performance by 160 member Romain Rolland Choir Group in New Delhi and Calcutta. In New Delhi, the function held on 18 January, 1990, was attended by the Prime Minister and French Prime Minister.

During 1990-91, the scope and spread of the Festival of India in Federal Republic of Germany was finalised. An agreement was reached between India and Federal Republic of Germany regarding the Indian Festival in F.R.G. and the return German Festival by an exchange of letters between Secretary Culture and Director General, Cultural Relations, F.R.G. The Indian Festival which is slated to open in September, 1991, in Bonn would be an unostentatious economic and compact affair. India would be the first Country to bring such a Cultural Festival consisting of exhibitions, seminars, film festival and performing arts to the Unified Germany.

During 1990-91, the Swedish design exhibition was also received which is on show at Bombay. The exhibition would be moving to other centres also.

7 Scientific Research

INDIA has had a long and distinguished tradition in Science from accomplishments of ancient times to great achievements during this century; the latter half, prior to Independence has been related largely to pure research. At the time of Independence, our scientific and technological infrastructure was neither strong nor organised in comparison with that of the Developed World. This had resulted in our being technologically dependent on skills and expertise available in other countries during early years of Independence. In the past four decades, an infrastructure and capability largely commensurate with meeting national needs has been created minimising our dependence on other countries. But, we still have a long way to go in this field to be self-sufficient. A range of industries from small to the most sophisticated has been established covering wide-range of utilities, services and goods. There is now a reservoir of expertise well acquainted with the most modern advances in basic and applied areas that is equipped to make choices between available technologies, to absorb readily new technologies and provide a framework for future national Development.

SCIENCE AND TECHNOLOGY INFRASTRUCTURE

Scientific research in India is carried out under three major sectors, viz., Central Government, state governments and various in-house research and development units of industrial undertakings, both under public and private sectors besides cooperative Reserved & Development associations. Bulk of research effort in the country is financed by major scientific departments/agencies such as Departments of Science and Technology, Atomic Energy, Space, Scientific and Industrial Research, Electronics, Non-Conventional Energy Sources, Environment, Ocean Development, Biotechnology Agencies i.e., Indian Council of Medical Research, Council of Scientific and Industrial Research, Indian Agricultural Research Institute, etc. There are about 200 research laboratories within the purview of these major scientific agencies carrying out research in different areas. Besides, there is a large number of scientific institutions under the Central ministries/departments which carry-out research programmes of practical relevance to their areas of responsibility. States supplement the efforts of Central government in areas like agriculture, animal husbandry, fisheries, public health, etc. Institutions of higher education carry-out sizeable work in science and technology and are supported by the University Grants Commission and Central and state governments. They also carry-out sponsored research projects financed by different agencies.

A number of incentives are being provided by Government to industrial establishments in private and public sectors to encourage them to undertake research and development activities. Consequently, scientific research is gaining momentum in several industrial establishments. As on January, 1990, there were over 1,200 in-house research and development units in public and private sectors, reorganised by the Department of Scientific and Industrial Research. Also, recently a 'Pass Book' Scheme has been introduced for import of scientific equipment liberally, by public-funded research institutions through Department of Science and Technology.

SCIENTIFIC POLICY RESOLUTION

The Science policy of Government, based on Scientific Policy Resolution adopted by Parliament on 4 March, 1958, lays stress on Government's responsibility to secure for people the benefits from acquisition of scientific knowledge and practical application research. It is also Government's policy to encourage individual initiative for dissemination of knowledge and foster programmes to train scientific personnel to fulfil nation's needs in science, education, agriculture, industry and defence. In national priorities, science and technology has been recognised as major instrument for achieving national goals of self-reliance through economic and multifaceted socio-cultural development. New Departments of Environment, Ocean Development, Non-Conventional Energy Sources, Scientific and Industrial Research and Biotechnology have been set-up to deal with nationally important and newly emerging areas that call for significant science and technology inputs. Significant achievements have been recorded since then.

TECHNOLOGY POLICY STATEMENT

The Technology Policy Statement announced in January, 1983, is in response to the need for guidelines to cover a wide-ranging and complex set of related areas keeping in mind capital-scarce character of a developing economy. It aims at ensuring that country's available natural endowments, especially human resources, are optimally utilised for continued increase in the well-being of all sections of people. Technological advancement is sought to solve country's multifarious problems and safeguard its Independence and Unity. Among its objectives are attainment of technological competence and self-reliance, provision of gainful employment, making traditional skills commercially competitive, ensuring maximum development with minimum capital, modernisation of equipment and technology, conservation of energy, ensuring harmony with environment, etc.

To evolve instruments for implementation of the Technology Policy, the Government set-up in June, 1983, a Technology Policy Implementation Committee. On completion of its tenure in mid-1987, it gave way to a new autonomous body Technology Information Forecasting and Assessment

Council (TIFAC). It was constituted for strengthening national capabilities in technology forecasting and assessment and to provide Government with independent policy options and advice. Working under the Department of Science and Technology, it monitors technological developments in India and Abroad. TIFAC has undertaken an important project for integrated, computerised, inter-active and decentralised nationally accessible technology information system called TIFACLINE. Technology forecasting and assessment studies were undertaken for Petrochemicals, Housing, Building Technology and Skills; Human Settlement Planning, Technology modernisation of Steel Plants, Sugar, Fertilizers, Energy (Coal Combustion), Electronic materials, etc.

EXPENDITURE

Expenditure on research and development and related scientific and technological activities increased from Rs 4.68 crore in 1950-51 to Rs 1,890.58 crore in 1984-85. It was estimated to be Rs 3771 crore in 1988-89. Seventh Plan Outlay for science and technology sector was Rs 7,535 crore compared to Sixth Plan Outlay of Rs 3,716 crore. One percent of GNP was devoted to Reserve and Development activities in the country during 1988-89. An idea of expenditure on scientific research and development at National Level as also outlays for science and technology sector over the successive Plan Periods is given in table 7.1 and 7.2.

TABLE 7.1 EXPENDITURE ON SCIENTIFIC RESEARCH AND DEVELOPMENT AND RELATED ACTIVITIES

(Rs crore)

Sector	Expenditure on Research and Development					
	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90
Central Sector	14.22.25	1654.06	2039.68	2442.75	2875.11	3306.38
State Sector	126.11	162.78	164.56	183.92	232.91	260.86
Private Sector	233.19	251.94	291.63	310.27	363.79	436.55
Total	1781.55	2068.78	2495.87	2936.94	3471.81	4003.79

TABLE 7.2 PROGRESS OF EXPENDITURE ON S & T IN PLANS

(Rs crore)

Detail	Plan	Non-Plan	Total
First Plan	14	6	20
Second Plan	33	34	67
Third Plan	71	73	144
Fourth Plan	142	231	373
Fifth Plan	693	688	1,381
Sixth Plan	2,064	1,652	3,716
Seventh Plan	4,398	3,137[1]	7,535

[1] Estimated.

SCIENCE ADVISORY COUNCIL

The Government of India have set-up a National Science and Technology Council (NSTC) with effect from 15 October, 1990, for a period of three years, to provide policy and direction for the development and application of science and technology in the country, particularly from the view point of fully harnessing S & T for National Development. The Prime Minister is the Chairman of the council, besides 17 other expert members.

SCIENCE AND TECHNOLOGY ADVISORY COMMITTEES

Science and technology plays key role in development of economy. In order to integrate science and technology in economic sectors and also to analyse introduction of appropriate technology, a Science and Technology Advisory Committee (STAC) in each economic ministry has been proposed. Currently, 19 ministries have set-up such committees.

The committees are *inter-alia* required to make technology plan in the concerned Ministry and also to frame-out programmes to absorb and adapt technologies. A nodal committee, Inter-Sectoral Science and Technology Advisory Committee (STAC), has been set-up in the Department of Science and Technology to identify and address cross-sectoral problems. It draws membership from all economic sectors as also from the Council of Scientific and Industrial Research, Indian Council of Agricultural Research, Planning Commission, etc.

DEPARTMENT OF SCIENCE AND TECHNOLOGY

The Department of Science and Technology (DST) which was set-up in 1971, has been assigned responsibility of formulating Policy Statements and Guidelines on science and technology; promoting new areas of science and technology; undertaking or financially sponsoring scientific and technological surveys, research, design and development and supporting national research institutions and scientific bodies. It coordinates all activities relating to International science and technology collaborations except in specific areas assigned to other agencies. It deals with promotion of and support to indigenous technology, disseminates scientific and technological information and coordinates multi-institutional inter-disciplinary activities in science and technology. It also provides secretarial support to the National Science and Technology Council, National Science and Technology Entrepreneurship Development Board, National Council for Science and Technology Communication and Technology Information Forecasting and Assessment Council.

Over the years, the department has made sustained efforts to promote and accelerate development of science and technology in areas relevant for Societal Application, coordination of inter-disciplinary multi-institutional programmes and providing support to academic and other research institutions for carrying out basic and applied research. The department has been catalytic and instrumental in identifying, formulating and implementing a large number of programmes with the help of expertise available within the country and abroad, in front-line emerging areas such as Biotechnology, materials, Plasma Physics, etc. These programmes are ultimately expected to yield results of direct relevance to National Development.

SCIENCE AND TECHNOLOGY

PROMOTION SCHEMES

Two existing promotion schemes, *viz.,* General Research Scheme and Science and Engineering Research Council have been integrated into one, *i.e.,* R and D funding mechanism. Broad objectives of this scheme are :(i) to promote research in newly emerging and frontline areas of science and engineering including multi-disciplinary fields, and (ii) to selectively promote general research capabilities in relevant areas of science and engineering,taking into account existing research capabilities of host institutions. State council have been set-up in 24 states/UTs so far.

As a part of promotional programme, emphasis has also been given to encourage participation of younger scientists in science and technology activities by providing them support for creative research through project support and for participation in International Conferences. Besides, they are provided opportunities to interact with eminent scientists through contact programmes. As part of this scheme, a new programme has also been initiated to support young research workers who have extra spark of orginality and motivation.

SCIENCE AND SOCIETY-RELATED SCHEMES

The department has specific programmes to promote science and technology and its application to benefit specific disadvantaged groups. These are: (1) scheme for young scientists; (2) science and technology application for rural development; (3) science and technology for women; (4) science and technology for weaker sections, and (5) utilisation of scientific expertise of retired scientists. The sixth scheme 'better opportunities for young scientists' in chosen areas of science and technology was initiated in 1986 for building national capability in selected front-line areas through training of talented youth under guidance of pioneering experts at reputed International Centres and utilising their talent to further expand expertise base of our institutions.

Pilot Scale Data Base Centres have been set-up by NTDMS in ten selected districts in different geo-environments for indepth understanding of the geo-referenced data for area-specific micro-level planning towards socio-economic development.

PROJECT INTEGRATED WASTE MANAGEMENT

The Development of Science and Technology, in an attempt to make the Metropolitan Cities into a cleaner and greener place, has evolved an Integrated Waste Magnagement approach by proposing building and maintaining of toilets and processing of garbage into fuel pellets. This system is designed to be on near self-sustaining basis, without depending much on financial support from the Government Agencies. The revenue earned from the sale of fuel pellets would be utilised for the maintenance of the toilets. Bombay produces about 4000 tonnes per day municipal garbage and nearly 50 per cent of the population do not have adequate toilet facilities. The land required for creating this facility would be provided by the Maharashtra Government on no cost or nominal charge basis and garbage would be delivered by the Municipal Corporation of Bombay on free of charge at garbage pocessing plant. The technology and experience gained from this project would also be useful for other cities and towns.

SUPPORT FACILITIES

Specially designed programmes for this objective relate to : (i) assistance to professional bodies, learned societies and science academies; (ii) support for organising National and International seminars; (iii) support for participation of Indian Scientists in major International Scientific Conferences; (iv) setting-up of regional sophisticated instrumentation centres; (v) long-term support to scientific research institutions, and (vi) assistance to states and union territories to establish Councils for Science and Technology.

Long-term institutional infrastructural requirements for science and technology are met through creation of autonomous and independent structures under overall umbrella of the department. States are also encouraged to set-up secretariats and councils for science and technology to act as focal points for planning, coordinating and promoting science and technology activities. Councils for Science and Technology or Departments of Science and Technology have been set-up in nearly all states/UTs.

ENGINEERING AND TECHNOLOGY PROGRAMMES

Engineering and technology schemes cover research and development activities related to industrial, social, regional and consumer requirements in addition to research in front-line areas. Applied research is sponsored in close cooperation with industry and user agencies to build up competence in various sectors and to achieve self-reliance. Major activities under the scheme are: (i) thrust area programmes-research and development projects are being encouraged and supported in: (a) membrane separation processes, (b) development of electrical materials, (c) lubrication technology, (d) irrigation and water management, and (e) robotics, (ii) Newer fibres and composites-initiated in 1975-this programme has centred around development of specific fibres and resin systems along with development of equipment and setting-up of regional test laboratories and is now directed towards introducing polymers and their composites into industry through design, development and manufacture of specific products. The projects cover: (a) Polymer Alloys, (b) application as bio-materials, (c) wider application for rehabilitation aids, (d) scale-up of impregnating pitch, (e) specific applications in two-wheelers, four-wheelers, automobiles, marine vessels and aircraft, and (f) commercialisation of Terephthalamide Fibre. (iii) Cyrogenics and ceramics more-work on design, fabrication and testing of Liquid Nitrogen Plant of ten litre per hour is continuing till technology gets commercialised in 1991. An integrated programme on design, development and fabrication of a Liquid Helium Plant to meet indigenous conditions and requirements will be supported until it is commercialised in 1994, and (iv) National coordination of testing and calibration facilites-this programme has been formulated essentially to ensure and imrove quality of industrial products, provide consumer protection and promote export of industrial goods. Objectives of the scheme are: establishment of accreditation/recognition by the Central Government of testing facilities in various sectors; setting-up heirarchy of Calibration Laboratories and promotion of testing and Calibration Facilities to improve National Needs.

TECHNOLOGY PROMOTION SCHEME

Technology Promotion Scheme aims at technology modernisation/ upgradation of industry/skills, specially that of relevance to small-scale and cottage sectors of industry besides sponsoring technology forecasting/ policy studies of interest to the Department of Science and Technology (DST). This involves preparation of proposals in consultation with experts and its support by DST or undertaking activity in coordination with inter-institutional mechanisms. Theme of such projects normally focuses on its application/relevance to respective areas/industries. Several projects covering areas like microprocessor-based low-cost automation, continuous forming of helicoidal flights by rolling, development of expert systems for Homoeopathy and Ayurvedic Systems of Medicine, etc., were supported.

PASS BOOK SCHEME FOR IMPORT OF EQUIPMENT

SPARES AND CONSUMBLES

The Government of India have introduced a new scheme of importing scientific equipments/spares and consumables for scientific research through Pass Books. Hitherto, the scientific institutions were required to obtain 'Not Manufactured in India Certificate' (NMIC) from the Directorate General of Technical Development (DGTD) and 'Essentiality Certificate' from the Administrative Ministry for claiming customs duty exemption. With the introduction of Pass Books, vide Customs' Notification No. 229/88- Customs dt. 1.8.1988 (Annexure v), the public-funded research institutions would be able to import their requirements in terms of equipments, consumables, etc, for scientific research with self-certification.

Under the scheme, the eligible institutions would be able to import equipment worth Rs one crore and consumables worth Rs 50 lakh annually. Any single equipment above Rs 5 lakh and consumables items above Rs 5 lakh a year would not be covered under the scheme. For making the import of such items and also on exceeding the limits, the institutions are required to follow the normal procedure of import through NMIC and Essentiality Certificate.

The Department of Science and Technology has been nodalised to issue Pass Books for import to the public-funded research institutions other than the universities and colleges, which will be covered by the Department of Education.

CONSUMER PROTECTION

The scheme was conceived to enhance consumer satisfaction through availability of better quality items of mass consumption. Areas covered involved identification of quality affecting parameters, prototype development and consumer education while projects supported cover quality improvement is done through new S and T inputs, GLS lamps, electrical plugs/switches/sockets, starters and ballasts of tubelights, safety-match boxes, fabric washing powders/syndets, edible oils, pencils and sharpeners, textile fabrics, etc.

INITIATION OF TECHNOLOGY MISSIONS

The scheme was worked out to help identify new mission areas in addition to existing five technology missions viz., immunization, oilseeds, telecommunications, drinking water and literacy. Some new missions to be identified may be tied-up with existing ones to act as a catalyst/supporting sub-mission.

NATIONAL SUPER CONDUCTIVITY PROGRAMME

Coordinated efforts are underway towards development of stable and engineering use of high temperature (liquid nitrogen or higher) super conductivity materials, wires, thin films, etc., and its applications.

INSTRUMENT DEVELOPMENT PROGRAMME

The Department of Science and Technology (DST) has been identified as a nodal agency for undertaking national programme on instrument development involving users, industry and R and D centres. In order to formulate, coordinate and implement these programmes, an instrument development cell was established in DST in 1975. The programme aims to promote, design and development of instruments leading to indigenous production and also to promote instrumentation culture in the country. Instrument

Advisory Committee comprising members from user agencies, industry and research and development organisations has been constituted to guide activities of the programme.

The department has played catalytic role in supporting Science and Technological activities in design and development of high-tech instruments through multi-institutional and multi-disciplinary programmes. Initial programmes were confined to development of opto-electronic instruments and solar energy measuring instruments. As a result of these efforts, a number of instruments *viz.*, audio-visual systems, Optical Pantograph, Profile Projector, Sunshine Recorder, Payranometer, etc., have been developed and are under regular production in the Central Electronics Limited., Sahibabad and National Instruments Limited, Calcutta.

Second phase programmes have resulted in development of sophisticated scanning Electron Microscope and Infrared Spectrophotometer.

During the Seventh Plan, some of the identified instruments in critical areas *viz.*, analytical, geo-scientific, agro-electronics and laser-based instruments were supported for development. To ensure subsequent production, industries were associated with each project from beginning. Digital Tide Gauge, Field-Usable pH Meter, low-cost instruments for chemistry teaching, ion selective electrode, Seismograph, Accelerometer, etc., have been developed and are in process of manufacture. In the Eighth Plan Period, it is proposed to nurture instrumentation through an integrated programme of design, development, manufacture and maintenance. Design and development shall be undertaken by specially set-up centres one each in analytical instruments, process control instruments, test and measuring instruments and medical instruments. Production and maintenance will be undertaken by specially trained entrepreneurs. Low volume high-cost instruments will be developed through special project funding to R and D institutions where expertise exists. In order to oversee and formulate policies for these programmes, research and development Sub-Council of Development Council of Instrumentation Industries, has been set-up in the Department of Science and Technology.

NATIONAL SCIENCE AND TECHNOLOGY ENTREPRENEURSHIP DEVELOPMENT BOARD

National Science and Technology Entrepreneurship Development Board which was established in 1982 has been devoting attention to providing increasing opportunities of gainful self-employment for science and technology persons since its inception. Some major programmes initiated are: (a) organisation of entrepreneurship development programmes; (b) creation of entrepreneurial awareness through camps; (c) setting-up of science and technology entrepreneurs' parks; (d) establishment of entrepreneurship development cells in academic institutions; (e) setting-up of task forces in selected backward districts for identifying resources, skill and need-based entrepreneurial opportunities for local S and T persons; (f) training teachers from colleges and universities in development of entrepreneurship skills; (g) introduction of entrepreneurship in course curricula of engineering degree, diploma and science courses; (h) encouraging group employment schemes, and (i) bringing out publications, videos and related material.

Main focus of the activities of the board has been on promotion of entrepreneurship in small-scale sector by S and T persons. About 700 new units have been set-up through these measures. It has also been consistently promoting close interaction between academic institutions and industries to bring about upgradation in products, processes and equipment and also for commercialisation of indigenou tec'nolŏies.'In āditign, about 5000 jobs have been created on a sustained basis.

POPULARISATION OF SCIENCE

The National Council for Science and Technology Communication (NCSTC), comprising representatives from Central and state governments, mass media, voluntary agencies, etc., has prepared detailed plans for popularisation of science and technology and growth of scientific and technological temper among people. NCSTC focuses its attention on areas like training in S and T communication; S and T communication information system comprising Vigyan Jatha, among other things, a data base resource-letters for communications in different Indian Languages and a Newsletter for science clubs; development and dissemination of S and T communication software (all media); field projects involving large number of people in S and T communication activities; national awards for science popularisation; research in S and T communication and coordination with other agencies in S and T communication.

'Vigyan Prasar' has been established as an autonomous body in October 1989, for; a) large-scale extension and dissemination of science and technology through all possible media and means.

b) to develop in time to come, a self-sustaining system for production and distribution of science and technology communication software and hardware.

c) to develop and undertake special projects in the these areas;

(i) hardware and technologies for learning and popularisation of science;

ii) software development and dissemination for science education and popularisation; and

(iii) demonstration of technologies for large-scale applications.

NATURAL RESOURCES DATA MANAGEMENT SYSTEM

It is a multi-disciplinary and multi-agency project aimed at generating computer compatible spatially oriented data bases of natural resources and socio-economic parameters to facilitate area-specific micro-level planning. Launched in 1982, it aims at developing and operationalising a scientific methodology for management of data on natural resources, and responsive to modern management needs. Experimental data bases have been set-up in five districts, namely, Gurgaon (Haryana), Sultanpur (Uttar Pradesh), Kheda (Gujarat), Koraput (Orissa) and Vishakhapatnam (Andhra Pradesh). Five more data base centres are in the offing. Application projects identified to demonstrate utility of these data bases relate to themes like management of water and land resources, monitoring of poverty alleviation programmes and location of services.

EARTH AND ATMOSPHERIC SCIENCES PROGRAMME

DEEP CONTINENTAL STUDIES

The project is aimed at using modern geological, geo-physical and geo-chemical tools to obtain information of deep structure of Indian Lithosphere. Initially, a transect running from Jaipur to Raipur has been selected to carry out integrated field and laboratory studies. Projects relating to magnetotelluric and magneto-variation, geological mapping and remote-sensing studies have been approved for support. In addition, laboratory investigations to determine high pressure temperature characteristics and mathematical modelling of geo-physical data form important components of this project. A new project 'Metamorphic and geo-chemical studies of Deep Continental Crust in North-West Indian Shield' has been sanctioned recently.

DEEP SEA FANS

This programme has been launched with a view to studying geological, geo-morphological, structural and geo-physical setting of Deep Sea Fans and is expected to throw light on the nature of oceanic crust and various events in evolution of the Himalayas. Organisations like Geological Survey of India, Oil and Natural Gas Commission, Indian Institute of Geomagnetism, National Institute of Oceanography and other concerned universities are participating in the programme.

ALL-INDIA COORDINATED PROJECTS

SEISMOLOGY

This 'Seismology Programme' initiated the during Sixth Plan continued in the Seventh Plan also. The infrastructure e.g., seismic stations and strong motion seismic networks under the project at various locations in the Himalayan Belt, has been generated and some recent events have been successfully recorded making many significant contributions in seismicity and seismotectonics of the Himalayas. Studies being pursued are expected to enhance our knowledge of earthquake mechanism, seismic risks, design codes and mitigation of earthquake hazards.

HIMALAYAN GLACIOLOGY

A multi-institutional and multi-disciplinary coordinated project in the field of 'Himalayan Glaciology' had been initiated during 1986 for studying snow-cover mapping, glacial inventory, hydro-meteorological and hydrological, geo-logical and geo-morphological aspects of glaciers. The project involves eight research and development institutions besides Himalayan States. During 1987, a glacial expedition to Chhota Shigri Glacier was organised and some geo-logical, meteorological, hydrological and geophysical data collected. These studies will be helpful in evaluation of snow-melt/glacial-melt contribution in the northern river system. Efforts would be made to link data collection platforms (DCPs) with INSAT for better understanding of Glaciers.

ARID ZONE RESEARCH

This multi-institutional coordinated programme was launched in 1987 to enhance productivity of land, man and animal in arid land regions of the country with application of Science and Technology. Projects ranging from monitoring the process of desertification, establishment of natural resource data bases, sand-dune dynamics to surface and Ground Water interrelationship are being supported.

'DYNAMICS OF MONSOON'

Under this programme, data will be collected at sites covering continuously moist, periodically moist and mainly dry regions of monsoon by using both conventional and modern techniques like instrumented meteorological tower, doppler sodar, tether-sonde, mini-radiosonde radiometer, etc. Studies using these and other conventional data will lead to understanding of dynamics of monsoon, vagaries of which are intimately related to rainfall distribution in North India.

THUNDERSTORM MODELLING

This project has been prepared with the objectives of understanding genesis, development, movement, etc., of thunderstorms leading to realistic 'thunderstorm modelling' under Indian conditions. This study will also help in parameterisation of convective processes in regional and global circulation model as well as for improving the present capabilities of weather forecasting particularly for aviation.

TROPICAL OCEAN AND GLOBAL ATMOSPHERE PROGRAMME

This Tropical Ocean and Global Atmosphere Programme Project is being launched as part of an International Programme and includes deployment of Data Buoys, XBT Lines, Additional Tide Gauges, etc., and exchange of specified meteorologial and oceanographic data with participating countries. It will lead to improved understanding of oceanographic and atmospheric processes and air-sea interaction mechanism over tropical oceans and to develop reliable climate model relevant to our country. It will also help increase our capabilities for forecasting monsoon and cyclones.

NATIONAL CENTRE FOR MEDIUM RANGE WEATHER FORECASTING WITH SUPERCOMPUTING

Aimed with the objective to inform and guide farmers well in advance about various farming activities in view of the expected weather, National Centre for Medium Range Weather Forecasting with Supercomputing and other necessary facilities is being established. As part of the programme, 127 Agromet Field Units in different agro-climatic zones will be established from where agro-meteorological advices will be issued to farmers for more efficient agricultural operations. A Super Computer System has been commissioned in New Delhi for this purpose. The Department of Science and Technology is acting as a nodal agency for implementation of the project in cooperation with India Meteorological Department, Indian Council for Agricultural Research, Ministry of Information and Broadcasting, Department of Agriculture and other relevant departments of states.

INTERNATIONAL COOPERATION

International collaborations are pursued with a view to gaining through interaction with other countries in areas of mutual interest, establishment of contacts with scientists and institutions, opening new avenues for further interaction, providing/ receiving expert assistance through bilateral linkages, enhancing flow of Science and Technology information through interaction between scientists and laboratories in other countries.

India has at present agreements of cooperation in S&T with over 40 countries in the world, say for example Australia, Argentina, Brazil, China, Japan. The Netherlands, Cuba, Pakistan, U.K., etc. During 1987-88, several new initiatives took shape. These included: signing of integrated long-term programme of cooperation in Science and Technology between India and USSR. Indo-US cooperation in Science and Technology gained further momentum under the auspices of Indo-US Sub-Commission in Science and Technology and Science and Technology Initiative (STI). While Sub-Commission-sponsored activities were financed out of US-India Rupee Fund, joint research under STI was financed by both governments: An Indo-French Centre for Promotion of Advanced Research has been set-up in New Delhi jointly by Governments of India and France. It aims at promoting joint research in thrust areas of national relevance to both the countries. The Centre commenced its activities in 1987. Scientific Council of the Centre comprising experts from both the countries identified thirteen areas for joint research.

Centre of Science and Technology for the Non-aligned and other

Developing Countries has also been established in 1989 in New Delhi. Thirty two countries have so far signed the Statute of the Centre.

SCIENTIFIC SERVICES: SURVEYS AND METEOROLOGY

SURVEY OF INDIA

Survey of India, Dehradun, prepares topographical and geographical maps of the country on various scales needed for survey support for development and defence. It has undertaken several field and topographical surveys on various scales for developmental projects such as irrigation, power, communication, flood control, water supply, forestry, coal fields, etc. It participates in various scientific research programmes related to geodesy, geophysical studies including tidal predictions, indigenisation of surveying instruments and equipment, etc. It is also actively engaged in remote-sensing applications in mapping besides advising Government on all survey matters *viz.*, geodesy, photogrammetry, cartography, reprography, demarcation of external boundaries of India and their depiction on maps. It is the national agency responsible for standardisation of geographical names. Aerial photography of the country is also coordinated by it.

For modernisation, it introduces latest survey technologies and is actively involved in generating computerised systems for creating national survey data and information network and laying foundation for digital computerised cartography. Collaborations in scientific studies are carried out at National as well as International Levels.

Survey and Training Institute, Hyderabad, imparts training to Indian Nationals and those of neighbouring countries in various disciplines of surveying and mapping.

NATIONAL ATLAS AND THEMATIC MAPPING ORGANISATION

National Atlas and Thematic Mapping Organisation (NATMO), Calcutta, is a premier cartographic institution engaged in compilation of various maps depicting physical and other socio-economic conditions of India. National Atlas Maps on various themes in Hindi, English and other regional languages have already been published or are under different stages of publication. It has undertaken digital mapping with the help of computers and is proposing to undertake mapping of resource potentials of the entire country for helping development planners and academicians.

INDIA METEOROLOGICAL DEPARTMENT

India Meteorological Department (IMD) which was set up on an All India Basis in 1875, is the national agency for providing services in meteorology. Data collected from over 1,400 observatories of different types including data collection platforms is processed by it. IMD along with the Indian Institute of Tropical Meteorology (IITM), Pune, conducts fundamental and applied research in meteorological instrumentation, radar meteorology, seismology, agricultural meteorology, hydro-meteorology, satellite meteorology and air pollution. IITM has been conducting cloud seeding experiments for producing rain artificially.

IMD provides grants to certain universities/academic institutions to encourage research in atmospheric sciences and monsoon circulation. It also funds monsoon research by a centre in the Indian Institute of Technology, Delhi. A monsoon activity centre was established at New Delhi under the World Meteorological Organisation Programme.

The Department has a 'Positional Astronomy Centre' at Calcutta which compiles and publishes *Indian Ephemeris* in English and *Rashtriya Panchang* in English, Hindi, Sanskrit and nine other Indian Languages.

Meteorological and weather services are provided by IMD from its headquarters at New Delhi and functional offices responsible for climatology and forecasting at Pune. There are five regional Meteorological Centres at Bombay, Calcutta, Madras, Nagpur and New Delhi. For better coordination, Meteorological Centres have been set-up in 12 state capitals, *viz.,* Ahmadabad, Bangalore, Bhopal, Bhubaneshwar, Guwahati, Hyderabad, Jaipur, Lucknow, Patna, Srinagar, Trivandrum and Chandigarh. To render service to agriculturists, weather bulletins are issued daily since 1945 from Meteorological Centres relating to their regions. They give district-wise forecasts of weather and warnings against adverse weather. Agro-meteorological Advisory Service Centres established at Madras, Pune, Calcutta, New Delhi, Bhopal, Chandigarh, Srinagar, Patna and Bhubaneshwar issue Meteorological Advisory Bulletins to farmers once or twice a week. Flood Meteorological Offices have been working at ten different centres to provide meteorological support to flood forecasting organisation of Central Water Commission. Tourism Departments at Centre and in states have access to Meteorological Centres for weather information of interest to tourists. Several Tourism Meteorological Offices are functioning in Jammu and Kashmir.

IMD issues warnings against heavy rainfall, strong winds and cyclonic weather for general public and various private and public organisations including aviation, defence services, ships, ports, fishermen, mountaineering expeditions and agriculturists. One hundred Disaster Warning System receivers have been installed in disaster-prone coastal areas of North Tamil Nadu and South Andhra Pradesh. Fifty more receivers would be installed along coastal areas of West Bengal, Orissa, North Andhra Pradesh and Gujarat. In addition, IMD operates 100 data collection platforms (DCPs).

Cyclone warnings to ports and ships are issued by Bombay, Calcutta, Vishakhapatnam, Bhubaneshwar and Madras offices. These are based on conventional meteorological observations from coastal and island observatories, ships in the Indian Seas, coastal cyclone detection radars and cloud pictures received from Weather Satellites. Cyclone Detection Radar Stations are located at Bombay, Goa, Cochin, Bhuj, Calcutta, Madras, Karaikal, Paradip, Vishakhapatnam and Machilipatnam. Weather Satellite Pictures transmitted by Indian National Satellite (INSAT-IB) are received at main Data Utilisation Centre at Delhi and processed and transmitted to users. A Cyclone Warning and Research Centre at Madras investigates problems exclusively relating to Tropical Cyclones.

Meteorological Data is exchanged with many countries through high-speed telecommunication channels. As part of India's cooperation with World Weather Watch Programme of World Meteorological Organisation, a Regional Meteorological Centre and a Regional Telecommunication Hub functions at New Delhi. An Area Forecast Centre is also located in New Delhi under the plan of International Civil Aviation Organisation.

IMD participates in Indian Scientific Expeditions to Antarctica and scientific cruises of Oceanographic Research Vessel, *ORV Sagar Kanya*. A Permanent Meteorological Observatory has been established at Dakshin Gangotri in Antarctica which functions round-the-year.

Indian Institute of Astrophysics (IIA), Bangalore, Indian Institute of Geo-magnetism (IIG), Bombay and IITM, Pune, which were formerly a part of India Meteorological Department, have been functioning as autonomous institutes since 1971. IIA conducts research in Solar and Stellar Physics, Radio Astronomy, Cosmic Radiation, etc. IIG records magnetic observations and conducts research in Geo-Magnetism.

CLIMATE

The climate of India may be broadly described as Tropical Monsoon Type. There are four seasons: (i) winter (January-February), (ii) hot weather summer (March-May), (iii) rainy south-western monsoon period (June-September) and (iv) post-monsoon period, also known as north-east monsoon period in the Southern Peninsula (October-December). India's climate is affected by two seasonal winds—the north-east monsoon and the south-west monsoon. The north-east monsoon, commonly known as winter monsoon, blows from land to sea whereas south-west monsoon known as summer monsoon blows from sea to land after crossing the Indian Ocean, the Arabian Sea and the Bay of Bengal. The south-west monsoon brings most of the rainfall during the year in the country. We can now predict rains successfully with developed models and trained manpower.

ATOMIC ENERGY

India is recognized as one of few countries in the world which have made considerable advances in the field of atomic energy. Despite the closely guarded nature of this technology at the international level, the country is self-reliant in the same and has established competence in carrying out activities over the entire nuclear fuel cycle. The executive agency for all activities pertaining to atomic energy in the country is the Department of Atomic Energy (DAE), which was set-up in 1954. Policies pertaining to the functioning of DAE are laid down by the Atomic Energy Commission (AEC) which was set-up in 1948. The portfolio of DAE has all along been under the charge of the Prime Minister.

The activities of DAE are primarily in the area of nuclear power generation, research and development in atomic energy and in the industries and minerals sector. These activities are carried out by its constituent units, Public Sector Units (PSUs) and by institutions which are given financial assistance by DAE. India has also been offering training facilities, fellowships, scientific visits, etc., and makes available the service of its scientists and engineers for expert assignments in several countries both through the International Atomic Energy Agency (IAEA) and through bilateral agreements.

HIGHLIGHTS OF THE NUCLEAR POWER PROGRAMME

When the country's atomic energy programme was launched in the 1940s, a three-stage nuclear energy programme was envisaged to use the available Uranium and vast Thorium Resources. The first stage was to comprise of Natural Uranium Fuelled Pressurised Heavy Water Reactors (PHWRs) which would produce power and Plutonium as a by-product. The second stage is expected to have Plutonium Fuelled Fast Breeder Reactors (FBRs), which in addition to producing power and Plutonium, will also yield Uranium-233 from Thorium. The third stage reactors would be based on the Thorium Cycle to produce more Uranium-233 for fuelling additional breeder reactors.

The present installed capacity of nuclear power reactors in India is 1,465 MWe. The total electricity generated by nuclear power stations during 1988-89 and 1989-90 was 5,817 and 4,625 Million kw hours respectively, and the target for 1990-91 has been fixed at 6850 Million Units. Excepting for the first two units at Tarapur, which are of the Boiling Water Reactor (BWR) type and were set-up as a turn-key by a United States of America's company, other power reactors in the country are of the PHWR Type which constitute the first stage of the programme. DAE aims at establishing about 10,000 MWe of nuclear power generation capacity from PHWRs during the coming ten to fifteen years. In addition, two reactors of the Pressurised Water Reactor (PWR) type of 1000 MWe each are being set-up at Kudankulam, Tamil Nadu, with the assistance of the USSR. Further, work on a Prototype Fast Breeder Reactor (PFBR) of 500 MWe capacity is also expected to be taken up in the near future.

A summary of the on-going nuclear power programme is given in

TABLE-7.3 SUMMARY OF ONGOING NUCLEAR PROGRAMME

Details of Reactor Units	Capacity
A. Operating Reactors	1465
2 BWRs, 5 PHWRs	
B. Reactors Under Construction	1645
7 PHWRs of 235 MWe each	

Details of Reactor Units	Capacity
C. Reactors in Planning Stage —Awaiting Sanction	6940
(a) 16 PHWRs, 4 of 235 MWe each, 12 of 500 MWe each	
(b) One PFBR of 500 MWe	500
Total	10550

In addition to the above, two PWRs of 1000 MWe each are planned to be set-up at Kudankulam, Tamil Nadu, with the assistance of the USSR.

Important inputs for the PHWRs are heavy water and nuclear fuel, which are made available by organisations within DAE. Amongst these, there are units which carry out exploration and survey of Uranium resources and subsequently mining and processing them for production of Uranium Concentrates. Other units are responsible for production of nuclear fuel and heavy water. Facilities are also available for the back-end of the nuclear fuel cycle to reprocess spent fuel from nuclear power reactors and for management of radioactive wastes.

A significant feature of the Indian Atomic Energy Programme is that it has all long been backed-up by a comprehensive R and D programme encompassing a wide-range of multi-disciplinary activities relating to atomic energy. This includes fundamental research in basic sciences to disciplines like Nuclear Engineering, Metallurgy, Medicine, Agriculture, Isotopes, etc. Research is also being carried out in FBR technology and frontline areas like fusion, lasers and accelerators.

All the organisations of DAE which are engaged in these activities, can be considered to be one of the following categories, namely, R and D units, PSUs, Industries and Mineral (I and M) sector units, Aided Institutions or Service Sector Units.

RESEARCH AND DEVELOPMENT UNITS

R & D work is carried out at three research centers, namely, Bhabha Atomic Research Centre (BARC) at Trombay, Bombay, Indira Gandhi Centre for Atomic Research (IGCAR) at Kalpakkam, Tamil Nadu and Centre for Advanced Technology (CAT) at Indore, Madhya Pradesh.

BHABHA ATOMIC RESEARCH CENTRE

The Bhabha Atomic Research Centre (BARC) was set-up in 1957 as the Atomic Energy Establishment, Trombay and in 1967 was renamed as BARC in memory of its founder Dr. Homi Bhabha. It is the premier national centre for research and development (R&D) work in nuclear energy and related disciplines. Facilities available at BARC include research reactors, APSARA, CIRUS and PURNIMA. Besides, a 5.5 MeV VAn-de-Graff accelarator is also available for experimental research in physics. A large indigenously built research reactor DHRUVA (100 MWt) is also operational at BARC. In collaboration with the Tata Institute of Fundamental Research (TIFR), BARC has set-up a 14 MV Pelletron Accelerator. It has also set-up a Beryllium Plant and Radio Pharmaceuticals Laboratory at Vashi. BARC has facilities for spent fuel reprocessing and management of radioactive wastes. The Power Reactor Fuel Reprocessing Plant and Nuclear Waste Vitrification Plant at Tarapur are managed by BARC. The Variable Energy Cyclotron Centre at Calcutta is a national facility for advanced work in Nuclear Chemistry, production of Isotopes for various applications and radiation damage studies on reactor materials. A Seismic Activity Monitoring Station was set-up in 1985 at Gauribidanur near Bangalore and it helps in detection and identification of underground nuclear explosions anywhere in the world. The Nuclear Research Laboratory at Srinagar and High-Altitude Research Laboratory at Gulmarg in Jammu and Kashmir conduct research in Atmospheric Physics and Cosmic Ray Physics. The Radiation Medicine Centre at Bombay uses Radioisotope for diagnostic and therapeutic applications. Production facilities exist at Vashi, Bangalore and Hyderabad for Radiopharmaceuticals.

The activities of BARC encompass a wide spectrum of fields such as Physics, Chemistry, Engineering, Metallurgy, fuel reprocessing, fuel fabrication, Radioisotopes, waste management, electronics, instrumentation, Lasers, Biology, agriculture, food technology, Radiation Medicine, etc. The Centre has several laboratories with state of the art equipment to carry out research and development work in all these areas. It has developed a number of technologies, some of which have been transferred to the industry for commercial exploitation. The Centre has also done considerable work in the applications of radioisotopes in medicine, agriculture and industry. Further, it oversees a country-wide personnel monitoring service for evaluating radiation exposure of workers in institutions using radiation sources.

BARC has provided the entire R and D back-up for the nuclear power programme, which has significantly helped the establishment of indigenous competence in this technology. It also closely interacts with the nuclear power sector and the industry and minerals sector in their activities and carries out considerable developmental work to imporve the efficacy of their operations.

INDIRA GANDHI CENTRE FOR ATOMIC RESEARCH

This Centre was set-up in 1971 at Kalpakkam (Tamil Nadu) to carry out R and D in FBTR Technology. A major facility here is an indigenously constructed 13 MWe Fast Breeder Test Reactor (FBTR) which attained criticality during October 1985. The reactor core uses an indigenously developed mixed carbide fuel. Completing the FBTR was a major step in the development of atomic energy programme in India, in that it was the first step in the second stage of country's nuclear power programme. The Centre is drawing up plans to build a 500 MWe Prototype Fast Breeder Test Reactor (PFBR), which is expected to be operational, around the turn of this century. Several engineering test facilities such as Sodium Loops and laboratories for Metallurgy, Radiochemistry and fuel reprocessing related to fast reactors, also function at the centre.

CENTRE FOR ADVANCED TECHNOLOGY

The Centre for Advanced Technology which was set-up in 1984 at Indore, Madhya Pradesh, spearheads research in frontier technologies such as fusion, Lasers and Accelerators. A synchrotron radiation source is being set-up here and it will be a major research facility in the country. The Centre is also establishing facilities to develop several types of Lasers for a wide-range of applications in R and D, industry and medicine.

PUBLIC SECTOR UNITS

Four Public Sector Units (PSUs) operate under DAE. They have a significant degree of operational flexibility and autonomy to meet their corporate objectives. Their functioning on commercial lines is like that of other PSUs under the government.

NUCLEAR POWER CORPORATION OF INDIA LIMITED

This is the most recent and largest of the PSUs. It was set-up in 1987 to implement the nuclear power generation programme on commercial lines by converting the erstwhile Nuclear Power Board into Nuclear Power Corporation of India Limited (NPCIL). It is responsible for designing, constructing, commissioning and operating all Nuclear Power Reactors in the country. The seven operating reactors (Refer Table 7.4) have a total installed capacity of 1435 MWe and comprise of : two units of 160 MWe each at Tarapur near Bombay; two units of 220 MWe each at Rawatbhata near Kota in Rajasthan; two units of 235 MWe each at Kalpakkam near Madras, and one unit of 235 MWe at Narora in Uttar Pradesh. Excepting Tarapur units which are of the Boiling Water Reactors (BWR) type, all others are of the PHWR Type. While the Rajasthan Reactors were set-up with the assistance of Canada, all subsequent reactors are of indigenous design and construction.

As may be seen in Table 7.4, several more 235 MWe PHWRs are in various stages of construction. The second unit at Narora is nearing completion and is expected to become critical during 1990-91. Construction of two reactors at Kakrapar near Surat in Gujarat is also in an advanced stage and the first of these is also expected to be commissioned during 1991-92. Work is in progress on four more reactors - two each at Kaiga in Karnataka and Rawatbhata in Rajasthan which are expected to be completed during 1995-96.

Table 7.4 NUCLEAR POWER REACTORS IN OPERATION AND UNDER CONSTRUCTION

Reactors in Operation		Capacity (MWe)	Reactors Under Construction (235 MWe each)	
Tarapur	1	160	Narora	2
Tarapur	1	160	Kakrapar	1
Rajasthan	1	220	Kakrapar	2
Rajasthan	2	220	Rajasthan	3
Madras	1	235	Kaiga	1
Madras	2	235	Rajasthan	4
Narora	1	235	Kaiga	2
Total		1435	Total	1645

As regards future power reactors (refer Table-7.5), advance action has been initiated on four more 235 MWe units and four PHWR units of 500 MWe each. Detailed design and engineering of the 500 MWe PHWR units are also being done in house by NPCIL. To meet the growing demand for electricity in southern region, it has also been decided to set-up two 1,000 MWe VVWR units (of the Pressurised Water Reactor type) in Kudankulam, Tamil Nadu, with Soviet assistance.

TABLE - 7.5 : REACTORS IN PLANNINGS STAGE AND AWAITING FINANCIAL SANCTION

Station / Reactor (s)	Capacity (MWe)	Capacity (MWe)
A. Being setup by DAE1		
a) Kaiga 3 to 6	235	940
b) Tarapur 3 & 4	500	1000
c) Rajasthan 5 to 8	500	2000
d) 5NP-1 to 5NP-6	500	3000
e) PFBR	500	500
Total		7440
B. Kudankulam 1 & 2 (1000 MWe each) (being set-up with USSR assistance.)		2000

URANIUM CORPORATION OF INDIA LIMITED

Formed in 1967, UCIL is responsible for mining, milling and processing of uranium ores. Its end-product (Uranium concentrates) is supplied to the Nuclear Fuel Complex (NFC) for fabricating nuclear fuel. It is operating uranium mines at Jaduguda, Bhatin and an Uranium Mill at Jaduguda. The mine at Jaduguda is being expanded to Mine Ores located at deeper levels. UCIL also has facilities to recover minerals such as Copper Concentrates and Molybdenum from the Ores. To meet future needs, this company is setting-up a major project at Narwapahar and Turamdih in Bihar for mining and milling of Uranium Ores. In addition, work at several more new locations is expected to be initiated during the coming years.

INDIAN RARE EARTHS LIMITED

Indian Rare Earths Limited, is the oldest of the PSUS and has been in operation since 1950. It has two mineral sand separation plants, one at Manavalakurichi in Tamil Nadu and the other at Chavara in Kerala. It also has a Rare Earths Plant at Alwaye, Kerala, which processes Monazite in beach sands. It has set-up a large project at Chhatrapur, Orissa known as Orissa Sand Complex (OSCOM). The major products of IRE are Limenite, Synthetic Rutile, Zircon, Rare Earths Chloride, etc. Its turnover during 1989-90 was about Rs 65 crore and the target for 1990-91 has been set at about Rs 134 crore.

ELECTRONICS CORPORATION OF INDIA LIMITED

Electronics Corporation of India Limited was set-up at Hyderabad in 1967 to manufacture electronic systems, instruments and components developed at BARC required for carrying out research and development work. Subsequently, it has pioneered the production of wide-range of indigenously developed sophisticated electronic systems, instruments and components for use in industry and the nuclear power programme. ECIL is one of India's leading organisations in computers, Televisions, control and instrumentation, communication systems and Nuclear Electronics. During 1989-90, the company recorded a peak turn-over of about Rs 250 crore and is expected to maintain this level during 1990-91.

INDUSTRIES AND MINERALS SECTOR UNITS

There are several organisations in this sector. Some of their outputs go directly into the nuclear power sector while others are marketed directly.

ATOMIC MINERALS DIVISION

The Atomic Minerals Division (AMD) is one of the first units of DAE set-up by the Atomic Energy Commission in 1949 with its headquarters at

Hyderabad. It is a multi-disciplinary organisation entrusted with exploration, propospecting and related ressource and development activities for indentifying atomic minerals resources in the country. Its activities are coordinated with those of UCIL, and together they establish the economic viability of Uranium Reserves at any given location so that the mining and processing of Uranium can be taken up by UCIL with minimal delay. AMD employs a variety of surveys and computer based analyses. It has done exploratory drilling in several areas of the country and has identified sufficient Uranium Reserves to support the envisaged PHWR Nuclear Power Programme. AMD has also drawn-up plans to step-up its exploratory activities to widen the resource base of Uranium.

NUCLEAR FUEL COMPLEX

Nuclear Fuel Complex, Located at Hyderabad, fabricates nuclear fuel for all Nuclear Power Reactors in the country and also produces Zircaloy Components and Seamless Stainless Steel Tubes. It has plants for converting Uranium Concentrates into Ceramic Grade Natural Uranium Oxide and enriched Uranium Hexafluoride to enriched Uranium Oxide. It has facilities for processing Zircon Sand into Zircaloy Oxide, Zirconium Sponge and finally Zircaloy Billets which are used to make Zircaloy components for Nuclear Power Reactors. Uranium Oxide is finally converted to pellets which go to make Nuclear Fuel Assemblies. Production of components such as Blanket Fuel containing Thoria Pellets, Nickel and Steel Reflector Assemblies and Special Assemblies, required for the FBTR and PFBR, also forms part of NFC's Fuel Fabrication Programme. Its special materials plant is a unique facillity in the country for the production and supply of high purity materials required for electronics and other industries. Facilities have also been set-up, for the production of Seamless Steel Tubes and other special tubes. NFC is planning to set-up additional facilities for fabricating fuel and reactor components to meet the future demand of the nuclear power programme.

HEAVY WATER BOARD

The Heavy Water Board (HWB) is responsible for design, construction and operation of all Heavy Water Plants in the country. Besides, a small unit at Nangal, there are five operating plants at Vadodara in Gujarat, Ratwabhata in Rajasthan, Talcher in Orissa, Tuticorin in Tamil Nadu and Thal-Vaishet in Maharashtra. Two more plants are in an advanced stage of commissioning at Manuguru in Andhra Pradesh and Hazira in Gujarat and these are expected to be operational during 1990-91. As these plants employ different technologies, India is unique in that, it has accumulated considerable expentise over all commercially viable heavy water production technologies. The Hydrogen Sulphide Water Exchange Process used at Kota and Manuguru Plants was developed indigenously at BARC. HWB also has plans to commence work on additional heavy water projects to meet the projected demand for this input by the long-term Nuclear Power Programme.

BOARD OF RADIATION AND ISOTOPES TECHNOLOGY

To carry out activities related to Radiation and Radioisotope Technology on commercial lines, the Board of Radiation Isotopes Technology (BRIT) was set-up in March 1988. Its primary objectives are to further the growth of Isotope Technology and support new applications in Nuclear Medicine, Teletherapy, Food Irradiation and Industry. BRIT has been entrusted with the responsibility for processing a variety of Radioisotopes and their derived products and supply of Industrial Radiography Equipment and Gamma Irradiation Equipment for applications of this technology. To promote use of radiation technology in the critical area of food preservation, BRIT plans to set-up demonstration plants for irradiation treatment of food products such as spices and onions. Radioisotopes and related equipment are being produced indigenously at Trombay. About 400 radioactive products and labelled compounds are produced and every year about 50,000 consignments of Radioisotopes and equipment are supplied to users in the country and abroad. Radioisotope Technology is also used in the development of high-yielding and disease resistant mutants of rice, wheat, groundnut, pulses, etc. A Commercial Radiation Sterilisation Plant (ISOMED) at Trombay provides sterilisation services to the medical industry.

AIDED INSTITUTIONS

Several autonomous scientific institutions in the country are given direct financial aid by DAE. In addition, DAE also has a body called the Board of Research in Nuclear Sciences (BRNS) to encourage research in science and engineering in areas of interest to it. This is done by way of scholarships, grants, etc. DAE also gives financial aid to the Institute of Mathematical Sciences (MATSCIENCE), Mehta Research Institute at Allahabad and National Board of Higher Mathematics.

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

The Tata Institute of Fundamental Research was formed in 1945 as a centre for pursuit of fundamental research in Mathematics, Theoretical Physics, Cosmic Rays and Nuclear Physics. Subsequently, its research activities expanded to areas like Astronomy and Astrophysics, Chemical Physics, Molecular Biology, Solid-state Physics, Solid-State Electronics and Computer Sciences. The facilities being operated by it include ballon facilities at Hyderabad, Radio Astronomy Centre and National Image Processing Facility for Astronomy at Ootacamund (Tamil Nadu) and 500 MHz FT NMR national facility at its headquarters in Bombay. In addition, it manages activities of Homi Bhabha Centre for Science Education and Basic Dental Research Project.

TATA MEMORIAL CENTRE

Tata Memorial Centre at Bombay, comprises Tata Memorial Hospital and Cancer Research Institute. It is foremost in the country in the field of detection and treatment of cancer and cancer research. The Centre is recognised as a Premier Postgraduate Centre in Oncology and allied subjects and is affiliated for this purpose to the University of Bombay.

SAHA INSTITUTE OF NUCLEAR PHYSICS

Saha Institute of Nuclear Physics was established in 1951 at Calcutta. It provides facilities for advanced research in experimental and theoretical Nuclear Physics, Solid-State, Atomic and Molecular Physics, Plasma Physics, High-Energy Physics, Crystallography, Molecular Biology, Biophysics, Nuclear Chemistry and Instrumentation.

INSTITUTE OF PHYSICS

Set-up in 1974, the Institute of Physics was originally a registered society funded by the Orissa Government and in 1985, it became one of the aided institutions of DAE. It provides facilities for advanced reserach in Theoretical Solid State, Nuclear and High Energy Physics and experimental Solid State Physics. A three MW Tandem Pelletron Accelerator, for experimental research in atomic, nuclear, solid state and applied physics, is expected to be commissioned in the near future at this institute.

SUPPORTING OR SERVICE SECTOR UNITS

There are several other units and groups of DAE which render support to the Atomic Energy Programme. Their infrastructural support is available to one or more of other units to carry out certain functions and, thereby, improve the efficacy of their operations.

DIRECTORATE OF PURCHASE AND STORE

The Directorate of Purchase and store provides support to departmental units in various materials management functions, right from tendering and ordering to delivery of materials and equipment. Its transport and clearance wing handles consignments through air, rail, sea, road and post parcels. The Directorate also has a Technical Liaison Mission in Paris to assist in inspection and follow-up of items purchased abroad.

CONSTRUCTION AND SERVICES GROUP

The Construction and Services Group is responsible for construction and maintenance of various infrastructural facilities. It prepares architectural design and executes the construction of office complexes, laboratory facilities and housing complexes. It also maintains existing building infrastructure and utilities.

ATOMIC ENERGY REGULATORY BOARD

Functionally, this Atomic Energy Regulatory Board is an autonomous body reporting to the AEC. Constituted in 1983, it carries out regulatory and safety functions as envisaged under the Atomic Energy Act, 1962, covering all DAE units and other radiation installations operated by medical, industrial and research users in the country. It is empowered to frame rules and regulations related to safety and regulatory requirements. It is also empowered to specify safety standards, codes and guides as envisaged under the Atomic Energy Act, relating to site-selection, design, construction, commissioning, operation and decommissioning of all Nuclear Installations. In addition, it has authority and responsibility to ensure compliance with standards and codes in both DAE and Non-DAE Organisations. The board is assisted by a number of committees with eminent scientists and engineers from industry, universities, etc., as members. Commissioning of any nuclear installation, be it a Power Reactor or a Small Research Reactor, has to be approved by the AERB.

MANAGEMENT SERVICES GROUP

Management Services Group is an in-house multi-disciplinary group providing staff support for analysis and dissemination of management information to senior officials in DAE by maintaining a Corporate Level Management Information System. It conducts perspective planning exercises on Nuclear Power, carries out financial analysis, feasibility studies and manpower planning, besides operating a multi-user computer centre and providing management consultancy services in information management to some DAE units.

CRISIS MANAGEMENT GROUP

Formed in October 1987, the Crisis Management Group it is responsible for ensuring that each of DAE's Nuclear Installations is adequately prepared and equipped to deal with any possible emergency situation involving radiation or conventional hazards both at the installations and during transportation. There is an on-going programme of updating emergency preparedness plans at all Nuclear Installations.

GENERAL SERVICES ORGANISATION

The General Services Organisation (GSO) is responsible for provision of all general services to DAE units at Kalpakkam. It looks after estate management activities and other utilities.

DIRECTORATE OF ESTATE MANAGEMENT

The Directorate of Estate Management (DEM) is responsible for allotment of residential accommodation to DAE Employees in Bombay. In addition, it manages land and building owned, leased or hired by the department.

INTERNATIONAL COOPERATION

India has been offering training facilities, fellowships, scientific visits, etc, and makes available the services of its scientists for expert assignments both through the International Atomic Energy Association (IAEA) and the countries with which it has entered into bilateral agreements for cooperation in the field of peaceful uses of Nuclear Energy.

INDIAN SPACE PROGRAMME

The primary objective of the Indian space programme is to establish operational space services in a self-reliant manner. The main thrusts of the programme are Satellite Based Communications for various applications, Satellite Based Resources Survey and Management and Meteorological Applications. Development and operationalisation of Satellites, Launch Vehicles and associated ground segment is integral to the above objective. Major emphasis is on achieving self-reliance in providing operational space services.

The Indian space programme was formally organised in 1972 when the Government of India set-up the Space Commission with a view to promote the development and application of space technology and space sciences for the socio-economic benefit of the Nation. The Department of Space (DOS)/Indian Space Research Organisation (ISRO) is responsible for the execution of the space programme in the country. DOS is also the nodal agency for the National Natural Resources Management System (NNRMS).

Development activities of ISRO are carried out by following centres/units: Vikram Sarabhai Space Centre (VSSC), Trivandrum; ISRO Satellite Centre (ISAC), Bangalore; SHAR Centre at Sriharikota (Andhra Pradesh); Space Applications Centre (SAC), Ahmedabad; Liquid Propulsion Systems Centre (LPSC) with its facilities at Bangalore, Trivandrum and Mahendragiri; ISRO Telemetry Tracking and Command Network (ISTRAC) with its network of ground stations and Development and Educational Communication Unit (DECU), Ahmedabad. The headquarters of the Department of Space and ISRO are located in Bangalore. The voted grant for the Space Programme during 1990-91 was Rs 434.86 crore.

SPACE APPLICATIONS

INSAT SYSTEM

The Indian National Satellite System (INSAT) is a multi-agency, multipurpose operational satellite system for domestic telecommunications, meteorological observations and data relay, nation-wide direct satellite television broadcasting and nation-wide radio and television programme distribution. It is a joint venture of DOS, Department of Telecommunications (DOT), India Meteorological Department (IMD), All India Radio (AIR) and Doordarshan. The Department of Space has direct responsibility for the establishment and operation of INSAT Space Segment.

INSAT-1B, launched in August, 1983, has completed its designed life of seven years. It is now in a slightly inclined orbit and is partially used.

INSAT-1C, launched on July 22, 1988, could operate with only partial capacity due to a power bus anomaly in the spacecraft soon after launch. The spacecraft lost its earth lock on November 22, 1989 and has become inoperable.

INSAT-1D, launched on June 12, 1990, on board the US Delta 4925 Launcher is placed at 93.5 degree E longitude. INSAT-1D is the mainstay of the INSAT Space Segment. Presently, it carries over 4000 two-way speech circuits connecting 105 Telecommunication Earth-Stations. The total number of VHRR images transmitted by INSAT-1D is 365 as of November, 1990. Out of 523 TV transmitters in the Doordarshan Network, 502 are linked through INSAT Space-Segment.

INSAT-2

INSAT-2 Satellites are being indigenously fabricated to replace the foreign procured INSAT-1 series of Satellites. The INSAT-2 Space Segment consists of three spacecraft with two of them collocated. Each of the INSAT-2 spacecraft will have about one and a half times the capacity of INSAT-1 Spacecraft and, Consequently, is heavier and more complex. The INSAT-2 Space Segment capacity has been planned taking into account the various users requirement till the turn of the Century. The First INSAT-2 Spacecraft (INSAT-2A) is scheduled for launch by the end of 1991 and the second (INSAT-2B) about a year thereafter, on board the European Ariane Launch Vehicle.

In the light of the INSAT-2 Spacecraft Project having made substantial progress in the realisation of structural and electrical thermal model and the need to carry out the transition from INSAT-1 Space Segment to INSAT-2 Space Segment in the time-frame 1993-95, fabrication of three more spacecraft in the INSAT-2 series, namely INSAT-2C, 2D and 2E has been approved by the Government.

Certain design improvements have been made on INSAT-2 spacecraft to ensure more reliable performance than INSAT-1 and to avoid any catastrophic failures.

INDIAN REMOTE SENSING SATELLITE

The First Indian Remote Sensing Satellite, (IRS-1A), was successfully launched on 17 March, 1988. The 975 Kg. Satellite was put into 904 km Polar Sun Synchronous Orbit by the Soviet Launch Vehicle "VOSTOK" and the satellite was operationalised on 7 April, 1988. Since then, it has been providing data on natural resources of the country on an operational, basis. The payload of IRS-1A consists of three state of the art cameras using charge coupled devices as detectors. Each provides data in four spectral bands, three of which are in the visible region and the fourth in the near infra-red. About 2,75,000 imageries over the Indian sub-continent have been obtained. IRS data products are available routinely from National Remote Sensing Agency (NRSA), Hyderabad. IRS imageries are comparable with those of French SPOT and US LANDSAT. Data from IRS-1A is being regularly used for application in agriculture, forestry and hydrology, forest mapping and damage detection, land use/land cover mapping, land degradation and desertification studies, waste-land mapping, soil mapping, etc. IRS-1A has become the mainstay of National Natural Resources Management System. In order to provide continuity in the IRS services, IRS-1B, indentical to IRS-1A, is scheduled to be launched during 1991. Development of Second Generation Satellites, IRS-1C and 1D, which will have improved spatial resolutions, additional spectral bands and capabilities for stereo imaging and more frequent revisits has also been initiated. IRS-1C is planned to be launched during 1993-94.

MICROWAVE REMOTE SENSING

Work on Microwave Remote Sensing has also started with the initiation of a project to develop an Airborne Synthetic Apperture Radar. In order to first get familiarised with the use of such an advanced system, it is proposed to use European Remote Sensing (ERS) Satellite Data from ESA. Microwave Remote Sensing Satellites will have a revolutionary impact in the areas such as fish school location, management of coastal zones, ocean geoid and ocean surface height determination, understanding of atmosphere boundary layer dynamics on the ocean surface, etc.

NATIONAL NATURAL RESOURCES MANAGEMENT SYSTEM

The Department of Space is the nodal agency for the National Natural Resources Management System (NNRMS), a unique system, in which data from remote sensing are integrated with conventional sources for effectively managing the country's natural resources. NNRMS undertakes a number of natural resources, survey and monitoring projects in collaboration with Central and State Agencies. They include, Ground Water, wastelands, forestry, agriculture, water resources, Geology.

REGIONAL REMOTE SENSING CENTRES

In order to provide digital analysis facilities to Remote Sensing users, five Regional Remote Sensing Service Centres (RRSSCs) have been established at Bangalore, Dehra Dun, Nagpur, Jodhpur and Kharagpur. These centres are equipped with Interactive Image Analysis Systems for carrying out analysis of various natural resources data from IRS, LANDSAT, SPOT and NOAA. The RRSSCs are involved in: (i) remote sensing user services (ii) remote sensing application mission; (iii) training of manpower for digital analysis techniques; (iv) software development (v) application validation programme which is aimed at validating digital analysis methodology for various applications to standardise the application packages for operational use and (vi) using advanced techniques like Geographic Information System, Digital Terrain Modelling, etc.

In addition, almost all the states have set-up Remote Sensing Application Centres with support and guidance from NNRMS.

SPACE TECHNOLOGY

LAUNCH VEHICLE TECHNOLOGY

AUGMENTED SATELLITE VEHICLE

The indigenous capability for the development of Satellite Launch Vehicle was demonstrated through the first successful launch of SLV-3 in July, 1980, carrying the 40 kilogram Rohini Satellite. India became the sixth country to have the capability to orbit her own satellite. The 22.7m tall SLV-3 was an All Solid Four Stage Vehicle and had a lift of weight of 17 tonnes. Two more launches of SLV-3s were conducted in May, 1981 and April, 1983, with the Ronhini satellites on board carrying Application Oriented Solid State Imaging Sensors. The efforts in the launch vehicle development are now concentrated to develop enhanced capability towards realising launchers for the Indian Remote Sensing Satellites and, subsequently, for Communication Satellites. The development of the Augmented Satellite Launch Vehicle (ASLV), basically derived from SLV-3, capable of putting 150 kilogram class technological/scientific payloads into near circular orbit is axpected to be completed by 1991-92. Though the first two developmental flights of ASLV, attempted in 1987 and 1988 respectively, did not succeed, they provided valuable inputs for the future flights and also validated a number of technologies such as strap on systems, inertial navigation, vertical integration of vehicle, S-Band Telemetry and Metallic Bulbous Heatshield. Design modifications based on the recommendations of the failure analysis committees on ASLV are now being incorporated in the vehicles. ASLV will be important for the country's scientific community for conducting various space science experiments and also for proving technology elements for the future Indian Launch Vehicles and Satellites.

POLAR SATELLITE LAUNCH VEHICLE

Significant progress has been made in the development of the indigenous Polar Satellite Launch Vehicle (PSLV). The first launch of this vehicle is expected during 1991-92. The 275 tonne, 44 metre tall PSLV will be capable of putting 1000 kilogram class Remote Sensing Satellite into 900km

Polar Sun-Synchronous Orbit. The vehicle has four stages. The first stage is a 2.8m Dia, 125 tonne Solid Propellant Motor with six SLV-3 First Stage Motors Strapped on to it. The 2.8m Dia, 11.5m Tall Second Stage is based on the Liquid Engine Technology of the European Launch Vehicle Ariane and uses 37.5 tonnes of Liquid Propellant. The third stage is a Seven Tonne Solid Propellant Motor and the fourth stage is again a Liquid Propellant Stage with 1.8 tonnes of Propellant. A Closed Loop Guidance System with On-Board Processor is employed for the vehicle.

GEO-SYNCHRONOUS SATELLITE LAUNCH VEHICLE

PLSV will form the basis for the development of the Indian Geo-synchronous Satellite Launch Vehicle (GSLV) which will eventually be able to launch Communication Satellites into geo-stationary Transfer Orbit. The development of GLSV is envisaged to be carried out in two phases. In the first phase, GLSV Mark-I will be developed and which will also have the Core Vehicle as PSLV and four liquid second stages of PSLV replacing the Solid Motors as First-Stage Strapons. This vehicle is expected to deliver 1100-1300 kilogram payloads into a Geo-Synchronous Transfer Orbit (GTO). In the second phase, GSLV Mark-II will be developed with the upper two stages of Mark-I replaced by a cryo-stage to realise a payload capability of 2000-2500 kilogram in GTO. The phasing of GSLV development is done in order to achieve the Geo-synchronous Capability in the shortest possible time using the technology already developed under PSLV. Cryo-stage development being quite complex, it necessarily involves a long lead time and, hence, this stage is proposed to be incorporated in the GSLV Mark-II. Development of this stage has already started and a sub-scale version with Liquid Oxygen and Gaseous Hydrogen has been recently tested for a short duration.

SATELLITE TECHNOLOGY

SROSS SATELLITE

The satellite development programme has already entered the operational phase with the successful development and launch of IRS-1A, IRS-1B, 1C and 1D and are now under fabrication to provide uninterrupted service in Satellite Remote Sensing. The indigenous INSAT-2 Operational Satellites, will replace the foreign procured INSAT-1 Satellite in the time-frame 1993-94. Stretched Rohini Satellite Series (SROSS) Programme is directed towards supporting missions using 150 kilogram Class Satellites for Space Science, Technology and Applications Studies. SROSS Satellites are intended for launch using ASLVs. The first and second SROSS Satellites could not be put into orbit due to Launch Vehicle failures. SROSS-3 is scheduled to carry Aeronomy Payload of National Physical Laboratory/ Physical Research Laboratory.

SPONSORED RESEARCH

The Sponsored Research Programme (RESPOND) of ISRO, initiated in 1976, has established a strong interaction between ISRO and academic institutions in the country to carry out research, developmental and educational activities of relevance to the Indian Space Programme. The programme is aimed at developing a large research base at academic institutions, manpower training, building infrastructure facilities and nurturing indigenous capability to support Space Research Programme. Major activities identified under *RESPOND* are research and developmental activities in space science, space applications and space technology areas, establishment of space technology cells in major academic centres, support to education programmes, conference, seminars, symposia, workshops, publication activities, etc. Since initiation, *RESPOND* has supported as many as 250 research projects at 80 institutions including universities, IITs, national laboratories, regional engineering colleges and public sector industries. As many as 1,200 scientists and engineers are involved in ISRO supported projects at academic institutions all over the country.

SPACE-INDUSTRY PARTNERSHIP

Indian Space Programme has been seeking an active participation of Indian Industries to support execution of its various programmes. To forge this into a sustaining relationship for mutual benefit and growth, a two-way partnership between ISRO and Indian Industry has been evolved. These linkages involved transfer of advanced technologies developed by ISRO to industry and provision of technological consultancy from space programme to industry on the one hand and utilisation of industry's own technological potential and expertise by Space programme on the other.

ISRO's Technology Transfer Scheme promotes and supports commercialisation of technologies developed by ISRO for applications in various fields. Major purposes of this scheme are: (1) meeting requirements of space programmes and projects through buy back of products produced by industry as a result of technology transfer; (2) servicing rapidly expanding space applications markets in India generated by space programme in satellite communications, television and radio broadcasting, meteorological services, remote sensing for natural resources survey and management and (3) exploiting full potential of indigenous technologies developed by ISRO for multifarious spin-off applications. So far, 165 technologies have been licensed by ISRO and National Remote Sensing Agency (NRSA). The role of Indian industry in participating in the projects has shown continuing growth both in terms of technological complexity and quantum of work. Certain premier industries in the field of Aeronautics, Communications and Engineering have now set-up their own specialised departments to deal with space products. These include rocket hardware, Spacecraft and Launch Vehicle Structures, Propulsion Engine Components, Propellants, etc.

SPACE CENTRES AND UNITS

Research and development activites under the space programme are carried out in various centres/ units of ISRO/ DOS. The major projects of ISRO are executed by Identified 'Lead Centres' depending upon the technology base established in them. A close coordination is maintained between the project core team in the 'Lead Centre' and other work centres to ensure smooth fructification of the project.

VIKRAM SARABHAI SPACE CENTRE

Vikram Sarabhai Space Centre (VSSC) is located at Thumba in Trivandrum. Also, it has establishments at Valiamala for major facilities of PSLV project and at Vottiyoorkavu for development of composites. An Ammonium Perchlorate Experiment Plant is located at Alwaye. VSSC is the largest ISRO Centre. It provides technology base for the Country's Indigenous Satellite Launch Vehicle development efforts. The Centre is also responsible for the development of several Spacecraft Subsystems. VSSC is the lead centre for major projects such as ASLV, PSLV and GSLV. Supporting these projects are specialised R and D groups in Avionics and Mission Dynamics, Solid Propulsion, Propellants and Chemicals, materials and mechanical systems, Integrated Launch Vehicle Programmes, systems reliability and programme planning and management. It has the infrastructure to support Launch Vehicle Development Programmes. VSSC also supports Rohini Sounding Rocket (RSR) Programme. The Space Physics Laboratory (SPL) is also located in VSSC.

ISRO SATELLITE CENTRE

ISRO Satellite Centre (ISAC) at Bangalore is the lead centre for Satellite Projects of ISRO. The Centre is responsible for design, fabrication, testing and management of Satellite Systems for scientific, technological and application missions. Spacecraft electronics group, mechanical systems group, attitude and orbit control systems group, mission planning and development group and technical support services group are the major groups in the Centre. *Aryabhata, Bhaskara, APPLE and IRS-1A satellites* were built here. At present *IRS and INSAT* series of satellites are being built in this centre.

SHAR CENTRE

SHAR CENTRE is located in Sriharikota Island on the East Coast of Andhra Pradesh. It is the main launch base for launching Satellite Launch Vehicles and Sounding Rockets. ISRO Range Complex (IREX) Headquarters with its launch facilities at SHAR, Thumba and Balasore and the country's largest, Solid Propellant Space Booster Plant (SPROB) are located here. The Centre also has Static Test and Evaluation Complex (STEX) and computerised data processing facilities to support Indigenous Launch Vehicle Missions.

LIQUID PROPULSION SYSTEMS CENTRE

The Liquid Propulsion Systems Centre has facilities for development of Spacecraft Propulsion System at Bangalore and for Launch Vehicle Liquid Propulsion System at Valiamala near Trivandrum. The major test facilities are located at Mahendragiri (Tamil Nadu). The Centre also manufactures 'Precision Transducers' at Bangalore.

SPACE APPLICATIONS CENTRE

This Space Applications Centre at Ahmadabad is involved in Research and Development in Space Applications. It has the primary responsibility to conceptualise, plan and execute projects and research programmes leading to practical use of space technology. The activities include Satellite Based Telecommunications and TV and remote sensing for natural resources survey and management, environmental monitoring, Meteorology and Geodesy. The Centre is organised functionally into Satellite Communications, Remote Sensing and Microwave Remote Sensing. Support services are provided by technical services group consisting of environmental test facilities, electronics and mechanical fabrication facilities and reliability and quality assurance group. It also manages the Delhi Earth Station.

DEVELOPMENT AND EDUCATIONAL COMMUNICATION UNIT

Developmental and Educational Communication Unit (DECU) at Ahmadabad is involved in various areas of software research such as television programme production, policy studies and research in society technology interaction, Social Science Research Studies and training of television programme personnel. Major tasks of DECU include: (a) Kheda Communication Project, (b) training of staff especially for Doordarshan (c) social research releted to communication and (d) policy and techno-economic studies related to applications of space technology.

ISRO TELEMETRY TRACKING AND COMMAND NETWORK

ISRO Telemetry Tracking and Command Network (ISTRAC), with its headquarters at Bangalore, operates a network of Ground Stations to provide tracking, Telemetry and command (TTC) support for Launch Vehicle and Satellite Missions of ISRO. Development of software packages and operation of network stations for present and future missions are the responsibilities of ISTRAC. ISTRAC has TTC stations at Sriharikota, Trivandrum, Bangalore, Lucknow and Car Nicobar in addition to A Multi-Mission Spacecraft Control Centre at Bangalore. The unit has established an *'S-band receive only station in Mauritius'* to support IRS mission. ISTRAC also operates Satellite Tracking and Ranging Station (STARS) at Kavalur in Tamil Nadu.

ISRO INERTIAL SYSTEM UNIT

This ISRO Inertial System unit, which is located at Trivandrum, is responsible for design and development of Inertial Systems both for Satellites and Launch Vehicles such as Momentum/Reaction Wheels, Solar Array Drives, Rate Gyro Packages, etc.

NATIONAL REMOTE SENSING AGENCY

National Remote Sensing Agency (NRSA) at Hyderabad is an autonomous institution supported by the Department of Space. The agency has facilities for surveying, identifying, classifying and monitoring earth resources using aerial and satellite data. The analysis, computation and interpretation facilities are located in Hyderabad and Satellite Reception Station is located at Shadnagar near Hyderabad. The Earth Station has facilities to receive data from Remote Sensing Satellites such as LANDSAT, NOAA, SPOT and IRS. NRSA also operates Indian Institute of Remote Sensing (IIRS) at Dehra Dun. This is a premier Remote Sensing and Aerial Photo Interpretation Training Centre in the country.

PHYSICAL RESEARCH LABORATORY

The Physical Research Laboratory (PRL) at Ahmadabad is the Premier National Centre for research in space and allied science. It is an autonomous institution supported mainly by the Department of Space. PRL is also entrusted with management of Udaipur Solar Observatory. Its main research programmes are in Solar Planetary Physics, Infrared Astronomy, Geo-Cosmophysics, Theoretical Physics including Climatology, Plasma Physics and Laboratory Astrophysics, Archaeology and Hydrology. PRL operates a field station at Thaltej for scientific programmes in Astronomy, Aeronomy and Astrophysics. PRL's 1.2m Reflecting IR Telescope installed at Gurushikhar near Mount Abu is the largest of its kind in the country.

ELECTRONICS

The production of electronic equipment and component has come a long way since the days of radio receivers in 1940s. Electronics Industry in India has grown with domestic demand as a result of import substitution efforts. In order to keep pace with the development in the international scene and also considering the increasing importance of Electronics for diversified application, the Department of Electronics was set-up by the Government of India in 1971. Since then, the department has been coordinating development of Electronics in India and reviewing constantly the growth achieved in the industrial front and in the R&D capabilities. For promoting the growth of the industry in terms of higher production, increased application and achieving self-reliance, the department through constant interaction with various industrial organisations has been adopting and recommending suitable measures required besides, funding various promotional activities.

Electronics plays a catalytic role in increasing production and productivity in key sectors of economy like power, coal, oil, railways, communication and process industries. Keeping this in view, major policy initiatives were implemented to provide a significant boost to electronics during the Seventh Five-Year Plan. Concerted efforts launched by the Government in matters like creation of capacity, fiscal aspects and import policy, etc., have helped electronics industry in achieving growth rates of over 35 per cent during the plan period as compared to 25 per cent during the previous plan period (1980-85). the industry also got diversified as a result and a wide variety of products were made available both for consumer as well as for professional applications. This growth has also helped in increasing employment generation in the country.

The Eighth Plan (1990-95) aims at creating an environment in which not only the high-level of growth of electronics production is maintained but the production levels are achieved at near International costs and prices. By 1995, the gross output of the industry is estimated to reach a level of Rs 30,000 crore, a growth of about 27 per cent over the last plan period with emphasis on achieving economies of scale, higher value addition and reduction of import content in various products. Promotion of software development, its export and development of Micro-electronics Industry have also been taken as the thrust areas in this Plan Period.

PRODUCTION BASE

Overall production base of the Eletronics Industry is very widely distributed. At present, there are over 2,500 units comprising Eleven Central Public Sector Units (with 26 manufacturing establishments), over 60 units in State Public Sector, over 400 units in Organised Private Sector and more than 2,000 units in Small-Scale Sector. During the past few years, contribution of Public Units in overall production of electronics is around 30 per cent, that of small-scale sector is about 35-40 per cent and the remaining 30-35 per cent is contributed by units in the Organised Private Sector.

PRODUCTION PROFILE

The production performance in different sectors of electronics for last five years is given in the table bellow.

PRODUCTION IN ELECTRONIC EQUIPMENT AND COMPONENTS

(Rs core)

S.No.	Item	1986	1987	1988	1989	1990
1.	Consumer Electronics	1275	1820	2400	2750	2990
2.	Instrumentation and Industrial Electronics	525	685	935	1260	1408
3.	Computers	280	375	486	670	948
4.	Communication and Broadcasting	504	710	900	1370	1698
5.	Strategic Electronics	222	300	390	525	527
6.	Components	510	700	1025	1500	1594
7.	Export Processing Zones	144	130	164	220	335
	TOTAL	3460	4720	6300	8300	9500
	Growth Rate (per cent)	30.1	36.4	33.5	31.7	14.3

Production of consumer electronic items increased from about Rs 1,030 crore in 1985 to Rs 2,990 crore in 1990. This sector always had the highest growth rate as well as production though some declining trend has been seen recently due to mainly lack of demand in the television sector. Indigenous technology for FM Transmission and low cost receiver has been developed for noise free reception. In addition, domestic manufacturing facilities for VCR/VCP and Microwave Ovens have been created with high-content of indigenous material. A major project on "System and VLSI Design for Digital TV" has been launched as a fore-runner to Digital fabrication and preparation of base for taking up HDTV project in the country.

The Control Instrumentation and Industrial Electronics Sector registered a production of Rs 1,408 crore in 1990 as compared to the production of Rs 404 crore during 1985. Due to the modernisation of industries like steel, non-ferrous metals, fertilisers, etc., the use of control instrumentation for providing distributed control, sequential operations, monitoring, analysis, etc., have been considerable. Rapid development of communication and control technologies resulted in increasing usage of Process Control System achieving better productivity and plant performance. Indigenously Developed Digital Control System, Data Loggers, Supervisory Control and Data Acquisition (SCADA) System, etc., have been introduced in power, steel and chemical plants. Automation has been introduced by port authorities, heavy machinery manufactures and process control industries. Computers and other electronic systems have been introduced in coal mines for aiding exploration as well as information management purpose. In the area of Test and Measuring Instruments, some of the new products introduced are *Digital Oscilloscope, Logic Analyser, Microwave Counter, PCM Mux Tester, etc.*

In computer industry, compound growth in monetary terms during the last five years was about 50 per cent. Majority of production is accounted for by PCs. PC/XTs, PC/ATs and Mini/Super Mini Systems (based on 80386 and 80483 Micro-processors). The production of computer peripherals during 1990 was Rs 170 crore as compared to Rs 143 crore in 1989. This sector achieved a better indigenisation. Almost the entire demand for Floppy Disk Drives, Dot Matrix Printers, CRT Terminals, Key Boards, Line Printers and Plotters were met from the indigenous production. Video Graphic Resolution Monitors (VGA) and High-Resolution 24 Pin Dot Matrix Printers were also introduced. The Indigenous Mainframe Systems, Medha 930 and its dual CPU Version Model 932, have been introduced by ECIL. Computer software has been identified as major thrust area due to availability of educated and technical manpower available in India. To take advantage of this, special emphasis on Software Export has been given. It is proposed to take the Software Exports to 400 million dollars by September 1991 from present level of 100 million dollars.

In the communication and broadcasting sector, production increased from Rs 380 crore in 1985 to Rs. 1, 698 crore in 1990. Telecommunication Commission was set-up recently to promote rapid development in technology, production and services. The commission has been endowed with a mandate to improve telecommunication accessibility, reliability and provide basic voice and non-voice telecom services to the Nation. It plans to increase DELs for 45 lakh in 1990 to 95 lakh by 1995. Telex from fifty five thousand lines to one lakh lines and Voice/Data Connections for business from ten thousand to one lakh in the corresponding period. In the area of broadcasting, steps are being taken for development of products like Professional CCD Video Cameras, High-Power TV Tansmitters and Auto-Tracking Antennas for Satellite Networking. Development of Video Graphics, Digital Reverberation Generators, Digital Video Effects Generator, Multi-lingual Character Generator, etc. are under process.

Strategic Electronics Sector covering areas of Radar, Navaid and allied field has achieved a production level of Rs 527 crore in 1990 compared to Rs 196 crore in 1985. Some of the equipment like X-Band Radar, fire detection and alarm system, Travelling Wave Tubes, etc., are being manufactured which have resulted in import substitution. Additional manufacturing capacity is expected for emergency position indicating Rescue Beacons, Search and Rescue Transponder, 'Flight Control Electronics' for pilotless target aircraft, Doppler Very High Frequency Omnirange, distance measuring equipment, Instrument Landing System, etc. These are expected to yield an annual turn-over of Rs 24 crore.

The overall production of electronic components increased from Rs 410 crore in 1985 to Rs 1,594 crore in 1990. Large capacities have been established for the manufacture of PCBs, Hybrid Circuits, B&W Picture

Tubes, Video Magnetic Tapes and cassettes, Floppy diskettes, etc. The colour picture tube manufactures have gone in for a higher-level of vertical integration by establishing base for manufacture of Electron Guns and Deflection Yoke. Metal parts for the B&W Electron Guns are now locally produced. Due to excess capacity for B&W Picture Tubes and Monochrome Monitors, the manufacturers are being currently pushed towards exports at competitive prices. The Major projects implemented recently include those relating to manufacture of Glass Shells for B&W Picture Tubes, Professional Grade Connectors for various applications, Multi-layer Chip Capacitors, Microwave Components of different types and Tantalum Capacitors.

EXPORTS

Electronics exports increased from Rs 240 crore in 1986 to Rs 930 crore in 1990. Substantial contribution has come from units in the Export Processing Zones. It has been noticed that bulk of the export has been done by private sector (87 per cent) while remaining has been contributed by the Public Sector. The key sectors for export have been components, industrial electronics and computer hardware and software. Some promotional efforts and changes in Import-Export Policy have been made to enhance the export of electronic items.

Export Processing Zone (SEEPZ) at Bombay provides an internationally competitive environment to electronic export. The country earlier had only One Free Trade Zone at Kandla (Gujarat) which was a Multi-Product FTZ. Subsequently in the eighties, four more Export Processing Zones (EPZs) have been set-up namely Cochin (Kerala), Falta (West-Bengal), Madras (Tamil Nadu) and NOIDA (Uttar Pradesh). Electronics exports from the EPZs have increased from a modest Rs 16.5 crore in 1980 to Rs 33.5 crore in 1990.

In less than a decade, Indian computer software industry has grown to a position of strength. Skill and expertise has been developed in areas like design and implementation of management information and decision support systems, banking insurance and financial applications, conversion methodologies and technologies, expert system, artificial intelligent and fifth generation systems, CAD, CAM, and CIM. Indian software enterprises have completed projects for reputed international organisations in 43 countries. To promote development and export of software through Sattelite Data Link. Three Software Technology Park have been set-up in Pune. Bhubaneswar and Bangalore and proposals for setting-up twelve more STPs are under consideration.

TECHNOLOGY DEVELOPMENT IN ELECTRONICS

The Department of Electronic supports and funds technology development through its councils set-up in various fields namely the Technology Development Council (TDC) for areas like components, computer communication and instrumentation, etc., the National Radar Council (NRC) for Radars, navigational aids, Sonars, underwater electronic systems, Laser and Infra-Red based Detection/Ranging Systems, National Micro-electronics Council (NMC) for design and production technology of LSI/VLSI, ASICs, etc. Electronic Materials Development Council (EMDC) for materials including special ceramics, high purity metals, GaAs, etc., and the National Photonics Council (NPC) for Photonic related areas covering Opto-electronics Devices, optical data storage, switching, imaging, vision informatics, etc. These Councils also provide inter-ministerial forum for overall development including generation of production capabilities in their respective areas. Some of the completed projects under these programmes have made a definite impact on the R&D capabilities of the country.

Time-bound projects in specific areas are being implemented through separate scientific societies like Centre for Development of Advanced Computing (C-DAC) having a mission to develop high performance parallel computers with applications of national importance and Centre for Materials for Electronics Technology (C-MET) to establish technology for a range of electronics materials. Other funded projects like Fibre Optics System Development, Knowledge-Based Computer System (KBCS), Advanced Technology Programme on Computer Networking (ERNET), Development of High-Power Devices, etc., are making satisfactory progress. To encourage application-oriented research, design and development, Electronics Research and Development Centres (ER&DCs) and Rural Electronics Technology Centre (RETC) Society for Applied Microwave Electronics Engineering and Research (SAMEER), National Centre for Software Technology, etc., are also being funded to strengthen respective R&D activities.

For carrying out meaningful programme of electronification in some important sectors, the department is coordinating with the Depatment of Post to introduce modern technology in the postal sector to cope-up with increasing customer's need and to have efficiency of operation. Accordingly, about Hundred Multipurpose Counter Machines have been installed in selected post offices in Bombay, Bangalore, Madras, Delhi, Lucknow, Ahmadabad and Hyderabad providing single window service for booking of any article like Registered Letter, parcel, using Speed Post facility, by way of money order, etc. The banking and insurance related activities have been computerised in Delhi providing better counter service as well as efficient back-office operation. Further, a Pilot Project has been launched to establish Satellite Based Communication Netwok to connect about 75 locations in the country using Very Small Apperture Terminal (VSAT). This communication network will be utilised for operating money transfer services to start with. Subsequently, it is likely to open the possibility of a variety of present system, thus, paving the way for revolutionising Indian Postal Operation.

TESTING FACILITIES

The Department of Electronics has launched a Standardisation, Testing and Quality Control (STQC) Programme with a view to assist the industries in quality improvement of indigenous electronic products and, thereby, enahnce their market acceptance at Domestic and International Level. The programme provides the standardisation of electronic products, implementation of National/International certification schemes covering the aspects of performance, safety and EMI/EMC and also provide comprehensive test and calibration services covering all product areas through a network of 23 laboratories spread all over the country.

Equipment Certification Schemes are operational covering television receivers and Personal Computers including allied peripherals. Efforts are underway to ensure that these certification schemes are acceptable at International Level.

STQC carries out IEC Quality Assessment System for Electronic Components (IECO) in its role of National Supervisory Inspectorate (NSI). Currently, 24 countries are members of the system and components approved under the system in one country is acceptable in other member countries without further testing.

The STQC Laboratory has been approved by Underwriter's Laboratories (UL), USA and TUV, FRG for giving UL and GS Safety Mark to the Indian Product. This helps them to compete in the International market. STQC Laboratories are also likely to obtain approval of under the IECEE Scheme for safety Certification of electronic products. Currently, 34 countries are members of the system and free trade of electronic products aproved under the IECEE Scheme between these member countries is permitted.

For EMI/EMC Testing, Four STQC Laboratories have established complete test capability and are capable of testing to FCC/VDE/CISPR requirements. Formal approval is expected shortly.

MANPOWER DEVELOPMENT

The Departmet of Electronics has been supporting projects relating to manpower and skill development. The programme on development of manpower for computers includes the following: The number of institutions conducting computer courses at degree and diploma levels has increased from about 35 in 1983 to over 400 in 1990, out of which financial support to about 250 institutions has been provided. The output of trained manpower has increased from less than 1000 in 1983 to about 12,000 in 1990. The Department introduced three new courses namely; Master of Computer Application (MCA), Diploma in Computer Application (DCA) and Diploma in Computer Engineering (DCE).

The Department is in the process of implementing a scheme through Computer Society of India (CSI) and Institute of Electronics and Telecommunication Engineers (IETE) for recognition of private computer courses.

With the assistance of the World Bank, a project proposal has been formulated with an outlay of Rs 44 crore to improve the quality of training programmes in Selected Engineering Colleges/Polytechnics including six CEDTs for electronics engineers and technicians, in a manner relevant to the needs and growth of Electronics Industry in the Country.

Seven Centres for Electronic Design and Technology (CEDT) have been set-up for imparting training in design and manufacturing aspects of electronic products. The department, in association with the Ministry of Human Resources Development, have launched a Pilot Programme for Computer Literacy and Studies in Schools Class Currently, 3000 schools are participating in this programme.

PUBLIC SECTOR UNDERTAKINGS

The Department of Electronics has the following three Public Sector Corporations under its administrative control: CMC Limited, Electronics Trade and Technology Development Corporation (ET&T) and Semiconductor Complex Limited (SCL). The department also works closer with other PSU's like BEL, ECIL, ITI, BHEL, etc.

CMC LIMITED

CMC Limited was set-up in 1976 to provide users a complete range of services connected with all aspects of computers, that is as a one point computer support company. It is a company committed to the creative use of computers and modern communication technology in vital sectors of the economy to improve the quality of life and productivity. The turnover for 1990-91 is expected to be more than Rs 137 crore which is 10 per cent more than the turnover in 1989-90. Nearly 2200 trained staff members have helped CMC to achieve this turnover. It provides hardware maintenance support to various equipment supplied by over 30 manufacturers. It coordinates implementation of project INDONET which is an integrated information management and distributing data processing facility spanning the entire country. Its consultancy and technical expertise includes applications like; computerisation of railway passenger reservation systems; economic load despatch management systems for electricity generating units; computerisation of banking operations; automatic message switching systems; ticketless trunk exchange in telecommunications; computerised fingerprint identification systems for Central and state fingerprint bureaux; crime detection systems for police organisations; computer-based environmental monitoring systems, etc. CMC has executed turn-key projects in many important sectors like Power, Transport, Oil etc. Besides, it has also bagged many software developmental order from the International markets.

ELECTRONICS TRADE AND TECHNOLOGY DEVELOPMENT CORPORATION

Electronics Trade and Technology Development Corporation (ET&T) was set-up with objectives of expanding foreign trade in electronics and undertaking developmets of technology in key areas. In addition, it is responsible for monitoring the requirements of industry and buying in bulk to provide large measure of support to electronics industry in its growth. The corporation has taken up a new innovative programme of self-reliance known as MTB Programme with the objective of providing substantial assistance to small-scale production units to manufacture cost-effective products of contemporary design and conforming to high quality standards. Under the programme, 14 inch black and white TV Sets are being manufactured by about 50 units in the country. Lost Cost PC project, launched recently, aims at making computers affordable to a wide segment of users for spreading computer culture in the country. Margdarshan Programme taken up by ET and T provides software package in the form of educational video tapes for community development, like fundamentals of electricity, safety in electrical work, safety from the fire hazards, colour TV, cobbling and film on antenna, etc.

SEMI-CONDUCTOR COMPLEX LIMITED

Semi-conductor Complex Limited (SCL) was set-up primarily to design, develop and manufacture LSI/VLSI Circuits. SCL commenced commercial production in April 1984 and consistently improved its financial performance every year before an unfortunate fire accident in February, 1989, destroyed the LSI Manufacturing and R&D Facilities.

Presently, the Government has approved setting-up of a State-Of-The-Art LSI/VLSI Wafer fabrication facility with a capability of manufacturing 44,000 Six-Inch Wafers Per Annum with the project outlay of Rs 183 crore within expected time-frame of 30 months. In order to have continuity of supplies to various customers, as an Interim Plan, SCL under foreign collaboration fabricate Wafer of LSI Circuits designed in-house. The SCL's continuing fabrication of Clock Chips, Pulse Dialler, etc. LSI Devices have been assembled at local assembly houses. Five VLSI Design Centres at Noida, Bangalore, Lucknow, Broda and Bhubaneshwar are fully operational. A few Application Specific ICs were designed as well as fabricated at these centres and work on some others is in progress.

Under Modules and Sub-Systems (M&SS) Programme, SCL has manufactured Modules consisting of QAW ECB, DEW Modules and eight bit Micro-computer (Unicorn) and IBM Compatible board. Chip on Board (COB) Line for manufacture of Quartz Analog Watch Electronic Circuit Boards (QAW ECBs) to be supplied to the Hindustan Machine Tools and Hyderabad-Allwyn have been set-up. COB facility for Titan was set-up lately. SCL also started assembly of IBM PC and add-on boards in addition to the Unicorn Microcomputer modules.

COUNCIL OF SCIENTIFIC AND INDUSTRIAL, RESEARCH

The Council of Scientific and Industrial Research (CSIR) which was constituted in 1942 by a resolution of the then Central Legislative Assembly, is an autonomous body registered under the Registration of

Societies Act, 1860. Functions assigned to the council are: (1) promotion, guidance and coordination of Scientific and Industrial Research in India including the institution and financing of specific researches; (2) establishment or development of and assistance to special institutions or departments of existing institutions for scientific study of problems affecting particular industries and trades; (3) establishment and award of research studentships and fellowships; (4) utilisation of the results of researches conducted under the auspices of the council towards development of industries; (5) establishment, maintenance and management of laboratories, workshops, institutes and organisations to further scientific and industrial research and to utilise and exploit for purposes of experiment or otherwise any discovery or invention likely to be of use to Indian Industries; (6) collection and dissemination of information in regard not only to research but also to industrial matters generally; (7) publication of scientific papers and journals, and (8) any other activity or activities to promote generally the objects of the resolution.

CSIR today is an integrated network of 39 research laboratories/institutes and two research associations with over 100 regional centres spread all over the country. It carries out research of value not only to industry but also to other sectors of economy such as agriculture, irrigation, health, mining, power utilities, transport and defence, besides, basic research.

Its expertise and experience is embodied in over 7,000 highly qualified scientists and technologists supported by an additional 14,000 skilled scientific and technical back-up personnel.

ASSISTANCE TO INDUSTRY

The inter-disciplinary expertise generated over the years by CSIR helps industry in various ways. Some of them are: (i) assessment of technology options including technology assessment and choice of technology; (ii) absorption, adaptation and up-dating of imported technology; (iii) identification of areas of R and D that will maximise returns including R and D project definition, planning and programming; (iv) productivity improvements through cost reduction, energy conservation and waste utilisation; (v) substitution of imported raw materials, components and process; (vi) pollution and effluents control including location of safe discharge points; (vii) repair and maintenance; (viii) trouble shooting, condition monitoring and maintenance scheduling, computer simulation and modelling; (ix) optimisation of construction cost through application of novel technological designs; (x) analysis, interpretation and validation of test results and data; (xi) laying down of standards and test-protocols and quality assurance; (xii) survey of literature and state of art reports, and (xiii) feasibility studies and project reports and analysis.

ACHIEVEMENTS

Geohydrological and geophysical studies were taken up by the NGRI in Rajasthan, Orissa, Karnataka, Andhra Pradesh, Jammu and Kashmir, Tamilnadu and Uttar Pradesh for location of suitable drilling sites in villages having acute problem of drinking water. Based on these geophysical and geohydrological investigations, 332 drilling sites were recommended. During this year (89-90), 172 wells have been drilled by various State Government agencies. Water quality in Andaman and Nicobar Islands has been monitored by NEERI from 452 sources.

Installation of 238 IRPs and two fill and draw type DPs has been completed and the plants were handed over to the State Government agencies after ensuring satisfactory performance. A Special Satellite-Shaped Controlled Release System containing a Polymeric Hydrogel has been developed by NCL for the regulated delivery of abate/temephos into water for long-term control of the guinea-worm disease vector, cyclops. Heavy metal pollution loads and heavy metal uptake ability of aquatic plant species of five water bodies, viz, Kalyani Devi Pond, Gadankhere Pond, Bone Mill Reservoir, East India Goat Company Reservior and Nawabganj Lake near Unnao and Lucknow respectively have been studied.

SERC-G has conducted 14 training courses-cum-demonstrations in construction techniques for rain water harvesting schemes and ferrocement water tanks. Training of manpower for the North Eastern Region and evaluation of drinking water sources for problem villages of Assam and Manipur were completed by RRl, Jorhat. Assessment of salinity tolerance under sandy and clay soils has been taken up by CSMCRI in pots and microplots.

Fiftysix hectares of wasteland were covered under plantation in the north-eastern region. RRL Jorhat provided the cultivation technologies of economic crops. The beneficiaries belonged to the Scheduled Castes and Tribes. Wastelands in the North-Eastern Region brought under cultivation totalled to 3,080 hectares. A unique anaerobic biological pilot scale treatment system (UASB) has been designed to overcome the problems of land and power requirements and bring down operational costs of effluent treatment plants. A full-scale demonstration treatment plant was formulated, designed and erected at the tannery of M/s. Wasan and Company, Agra, by CLRI. A one-dimensional model of marine atmospheric boundry layer that could predict the vertical structure of wind, temperature and moisture has been developed and tested by NIO for a region in the Arabian sea. A three-dimensional model of circulation in the Arabian Sea has been developed. Carbon and Nitrogen budgets for the Arabian Sea have been computed by NIO based on imput and output fluxes. This is the first such study for the Arabian Sea and reveals that the behaviour of Dissolved Organic Carbon (DOC) is labile and non-conservative in the Arabian Sea.

Fabrication of contoller chip for a 16 bit processor for the AC Motor Drive System has been completed by CEERI. This chip contains about 3000 components on a die of 4.7 x 3.4 mm size. The chips were encapsulated in a 48-lead ceramic dual-in-line package. This ASIC has met all specifications. A 500A capacity bi-polar cell with three bi-polar electrodes was constructed by CECRI for applications in Electrometallurgy. A Ten Point Optiocal Fibre Mine Communication System for coal mine was developed and successfully installed in TISCO's Malkera Colliery at Dhanbad on 12 November, 1989.

The first prototype of Driver-evaluation equipment designed by CSIO, was successfully integrated and tested on a limited scale at PTL, Mohali. A total of 629 freefall grab and 103 photograb operations were carried out by NIO at 140 stations in the Central Indian Ocean for collecting nodule samples. Underwater search for the submerged city of Ancient Dwarka off Gujarat Coast was conducted in December 1989 by NIO.

A three-month training programme in Oceanography for 22 scientists from thirteen Caribbean Commonwealth Countries was organised at NIO Goa, from October to December, 1989. Studies by CCMB on samples off Schirmacher oasis, Antractica, have indicated the presence of both bacteria and yeast.

A new family of catalysts (bioxyanions) capable of transesterifying Phenols with Diarylcarbonates has been discovered at NCL. NCL Pune has developed a single-step technology, the Albene Technology (AT for alcohol and Bene for Benzene) for the production of Ethylbenzene from Ethyl Alcohol and Benzene. This has been commercialized by the Hindustan Polymers, Visakhapatnam. An innovative process for the manufacture of ZSM-5 Catalyst has been developed by NCL.

IICT has provided know-how for the dispersion of Platinum Alloy Catalyst on active carbon. Cyanoacrylate and Anaerobic Adhesives which find use in binding various metals such as mild steel, stainless steel and aluminium have been developed by IICT. The Naphtha Pretreater Unit of 1,28,000 t/y capacity based on IIP-IFP technology was successfully commissioned at IPCL with the participation of IIP Scientists.

MYCOBACTERIUM HABANA ANTILEPROSY VACCINE.

Single dose of Mycobacterium Habana Anti leprosy vaccine has been found to change 75 per cent of Lepromin Negative rhesus monkeys to Lepromin Positive Status. The vaccine has been found to be safe in acute and subacute toxicity studies in rats and rabbits and the data has been submitted by CDRI to the Drug Controller (India) for permission to initiate phase I clinical trials.

Arteether, synthesized at CIMAP has been cleared by the Drug Controller (India) for phase I clinical trials as a New Blood Schizontocide for treatment of cerebral malaria and drug resistant Plasmodium Falciparum Cases. Single dose phase I clinical trials have been completed. An agreement has been signed by the CDRI with Arkopharma Laboratories Nice, France, for commercialisation of Gugulipid in eight European countries.

IICT undertook a number of sponsored research assignments for development of drug technologies. Processes for Flurbiprofen (a fluorinated anti-inflammatory drug), Norfloxacin (application in bacterial, gastroenteritis and certain unresponsive lower respiratory tract infections), Etoposide (treatment of lung and testicular cancer), Mitaxantrone(treatment of breast cancer and other solid tumours), Sulbactam (a semi-synthetic penicillin process), Timolol Maleate (used for glaucoma), Azidothymidine (Anti-AIDS), Acyclovir (anti-viral) and Pyrazinamide (Anti TB) have been passed on to industry for commercial exploitation. Controlled polymerization of Acrylonitrile at temperatures as high as 30°C has been achieved at NCL. Polymer support for immobilisation of Penicillin acylase has been achieved.

In a collaborative effort with Hindustan Antibiotics Limited, Pimpri, Pune, NCL has developed a Synthetic Macroporous Polymer Support for the immobilization and the support can be used for over 650 cycles of Enzyme Reuse as against 100 cycles currently achieved. Improved reverse Osmosis Membranes were developed by CSMCRI using imported Cellulose Acetate which gave 92-95 percent salt rejection (SR) and eight GFD flux at 450 PSI. Preparation of Neodymium Metal of high purity has been scaled-up to 300 gms per batch at RRL Trivandrum. The vacuum remelted metal has been used by DMRL for making Neodymium-Iron-Boron magnets of satisfactory quality.

HIGH PURITY IRON POWDER

A generator-cum-rectifier combination to draw current approximately of 1200 amps. has been commissioned at NML for the production of desired grade of power through Electrolysis.

HIGH YIELDIWG VARIETY OF LEMONGRASS CAUVERY

A high, yielding clone 52-22 has been developed by CIMAP and christened Cauvery! It contains on an average about 70 per cent higher oil content than that of the check variety OD-19 under South Indian agro-climatic conditions.

PLANT TISSUE CULTURE FLOWERING IN BAMBOO

A significant breakthrough in the cultivation of bamboo, one of the world's most important timber and fodder crops, has been achieved at NCL by the induction of precocious flowering in three species, Dedrocalamus Strictus, Bambusa Arundinacea and Dendrocalamus Brandisii.

RRL Trivandrum has been involved in the development of Pheromones for pest control, particularly for plantation crops like Cardamom, Pepper, Cashew, Coffee, Ginger, Turmeric, etc. Recently, the Pheromone for sweet potato weevil has been synthesised and was integrated into suitable traps for slow release. This has been successfully field-tested in collaboration with Entamologists from CTCRI, Trivandrum. This devlopment has aroused the keen interest of the FAO International Potato Research Centre, Peru, with whom large-scale field trials in major sweet potato centres of the world are to be initiated.

RRL Jammu has undertaken a programme of improvement of silk-yield in the traditional areas evolving Juvenile Hormones and formulation. The application of JH has shown increase in the silk content to the tune of 15 per cent, significantly improving the silk production as shown by reeling.

RESOURCE QUALITY ASSESSMENT

In this programme dealing with characterisation studies of Coal and Lignite recovered by several participating agencies, a total borehole core length of approx. 19,200 metres was processed and about 35,300 samples were analysed by CFRI. The characterisation studies completed during the period covered 1021 boreholes from 176 drilling block spread over 40 coal and lignite fields in various parts of the country, thus, generating new or additional information on the quality and properties of Coal and Lignite.

A geothermal plant, designed and built at NAL, was set-up at Manikaran, Himachal Pradesh, in August 1989 to generate electric power from hot water (about 90°C) issuing from borewells drilled in a water dominated Geothermal Reservoir. This five KW plant was indigenously developed under a collaborative programme between NAL, Geological Survey of India and the Himichal Pradesh State Electricity Board with DNES Sponsorship.

Residues of Organochlorine Pesticides in surficial sediments from several coastal marine areas around India were studied and mapped by NIO. With a view to investigating a possible co-relation between motorised vehicular traffic and Sulphate and Lead Accumulation in the foliage of avenue trees, a study was initiated by NBRI at Lucknow. The resulting positive monolinear regression relation between motorised vehicular traffic and SO4 and Pb Loads indicates the scope of using plants as a biomonitoring source for vehicular traffic. NEERI completed Environmental Impact Assessment Projects in Heera-Ratna Offshore Oil-Gas Fields of the Oil and Natural Gas Commission; Lube Plant of Madras Refineries Ltd; Vijaipur Fertilizer Plant; Aromatic Complex of NAPCO, Madras; 60 MW Captive Power Plant of MRL; and the Manuguru Project of Singareni Collieries Company Limited. NEERI also undertook study of distillation facilities in the Cauvery Basin; Hazard Study and Risk Analysis of LPG storage facilities at the Bombay Refinery of HPCL; and hazard study and risk analysis of Ammonia storage facilities at the Rashtriya Chemicals and Fertilizers Limited, Bombay.

CERAMIC HEADS FOR HIP JOINT PROSTHESIS FABRICATED AT CGCRI

CBRI developed a package technology for the manufacture of good quality building bricks for adoption at mass scale. The package involved development of a highly fuel efficient kiln, enhancing product output, designing appropriate clay matrix for high strenght, upgrading skill of artisans, costing, evaluation and ensuring smooth transfer of the entire technology. Ferrocement door shutters developed by CBRI are resistant to rotting, swelling, warping, peeling and attack from moth, termites and are less prone to damage by fire and weathering.

For the first time in the country, a 65.5 m tall 500 KV double circuit tower was tested at the Tower Testing and Research Station (TTRS) of SERC, Madras. This test was conducted at the request of M/s Locweld Inc., Canada, who are the designers and fabricators of the tower. The tower was designed for M/s Ontario Hydro of Canada. The designers chose the Tower Testing and Research Station of SERC in view of the unique facilities and expertise available for conducting all the special tests required by them.

NAL made a significant contribution to the LCA programme by undertaking to design and fabricate a 1:4.405 scale-high speed air intake model for testing in the wind tunnel at Modane, France. NAL completed the work on the development of a mathematical model of the HS 748 aircraft, with and without rotodome, using available data sets from a variety of sources, and exercised the model to simulate flight trajectories for conditions with and without the Rotodome. A measurement system has been developed at SERC-M to acquire transient dynamic load and response data from any structure during its field test and, then, to process off-line on a computer, with good accuracy and efficiency, the corresponding time histories and spectra in both digital and graphic forms.

OCEAN ENGINEERING APPLICATIONS

Software to retrieve and analyse the raw data on heave/pitch/roll time series to obtain Directional Wave Spectra has been developed by NIO. A software generated by IMTECH scientists associated with the National Facility of Distributed Information Centre on Enzyme Engineering, Immobilized Biocatalysts, Microbial Fermentation and Bioprocessing Engineering has been adopted by the European Molecular Biology Laboratory (EMBL) for world-wide distribution as *DNACLONE package.*

The computer software packages developed by SERC (M) continued to attract several user agencies in the Government and Public and Private Sectors. Fiftyfour packages were licensed to twenty parties in different parts of India. An improved version of the Flosolver Parallel Computer with sixteen Intel 80386-80387 Processors (32 bit) has become operational during the year, marking a significant advance in NAL's Parallel Computer Development Programme. The new version attains a sustained speed of three-four MFLOPS.

Inherently present Josephson Junctions have been exploited in making a two hole SQUID which operates at Liquid Nitrogen Temperature (77 K). It is an r.f. SQUID and is made out of bulk yttrium-barium-copper oxide (YBCO) Superconductor which remains superconducting upto about 90 k.

SPECTRAL SHIFT DURING PROPAGATION OF RADIATION AND ITS EFFECT IN OPTICAL MEASUREMENTS

Scientists of the Optional Radiation Group of NPL have demonstrated this important phenomenon with a simple experimental set-up. Disaccharide-

Octyl-Neoglycoprotein, in which the Disaccharide Moiety of the Specific Glycolipid Antigen, Phenolic Glycolipid-1, PGL-1 (Triglycosyl Phenolic Diacylphthiocerol), of Mycobacterium Leprae, the causative organism for leprosy has been synthesized by IICB. This is of potential use in the Serodiagnosis of Leprosy at an early stage of infection. A Highly Sophisticated Electrophysiology Laboratory for intra and extra-cellular micro-recordings from Single Neuronal Cells has been set-up at IICB for the first time in the country with West German Collaboration.

VAM-Fungi has been successfully cultured and maintained in Axenic Culture by CIMAP; this is observed to be the first report of the culture of a VAM-Fungus on a synthetic medium. The discovery is considered as a major breakthrough in Mycorrhizal Research.

OCEAN DEVELOPMENT

For centuries, people of India have been using the seas around the Indian Sub-continent for transport, communication and food. During the last few years, exploration and exploitation of living and non-living resources of the seas have acquired a new thrust. The new 'Ocean Regime' established by United Nations Convention on the Law of the Sea, 1982, which has been signed by 159 countries including India and ratified by 42 countries besides United Nations Council of Namibia as on 25 November, 1989, assigns much of the World Ocean to Exclusive Economic Zones where coastal states have jurisdiction over exploration and exploitation of resources and for other economic purposes.

SCIENTIFIC RESEARCH

Recognising the importance of oceans in economic development and progress of the Nation, the Government set-up Department of Ocean Development in July, 1981, for planning and coordinating oceanographic survey, research and development, management of ocean resources, development of manpower and marine technology. The department is entrusted with the responsibility for protection of marine environment on the high seas.

The budget outlay for various schemes for ocean development during 1990-91 is Rs 35 crore under Plan and Rs 7.02 crore under Non-Plan. The revised estimates are Rs 43.50 crore under Plan and Rs 12.17 crore under Non-Plan.

BROAD OBJECTIVES

The broad objectives of 'ocean development' have been laid down by Parliament in the Ocean Policy Statement of November 1982. The domain of our concern for development of oceanic resources and its environment extends from the coastal lands and islands lapped by Brackish Water to the wide Indian Ocean. India's Costline is more than 6000 km long and its territory include 1256 islands. Its Exclusive Economic Zone covers an area of 2.02 million sq.km. and the continental shelf extends upto 350 nautical miles from the coast. Briefly stated, the objectives of development of the oceanic regime are: (i) to explore and assess living and non-living resources; (ii) to harness and manage its resources (materials, energy and biomass) and create additional resources such as mariculture; (iii) to cope with and protect its environment (weather, waves and coastal front); (iv) to develop human resources (knowledge, skill and expertise); and (v) to play our rightful role in Marine Science and Technology in the International Arena.

THRUST AREAS

The Eighth Plan objectives of the Department are: (i) To modernise the basic S and T under-pinnings required for a rational approach to Exploration, Exploitation, Surveillance and Management of Marine Resources and Environment as well as to design and develop technological packages that would catalyze self-employment activities: (ii) To effectively safeguard long-term National Interests in the Global Commons: Polymentallic Nodules from the deep sea in the Central Indian Ocean and Antarctica: (iii) To develop viable marine infrastructure and expertise in this high S and T area of wide international interface, to be able to support important national interests: extension of technical assistance to friendly countries and make competitive bids for International Technological Services.

The major programmes of the department, thus, formulated for a concerted thrust during the Eighth Plan are: (i) Antarctic Research; (ii) Polymetallic Nodules from the deep sea-bed in the Central Indian Ocean; (iii) exploration and assessment of living and non-living resources; (iv) Coastal Ocean Monitoring and Prediction Systems; (v) Marine Instrumentation and Systems; (vi) research, development and specialised manpower; and (vii) policy and law relating the 'Global Commons.' Continuance of programmes relating to Polymetallic Nodules and Antarctic Research and Exploration of Resources rests on the ground already created during the previous plan, but would be backed by incisive, rigorous and analytical approaches to greatly sharpen the illumination shed by their results. All these three programmes have reached a critical stage for a more meaningful take-off. But, the transition from and roundwork to actual flight is expensive, forcing a hard-headed analysis to define the boundries of a sensible flight that would serve National Interests, as well as design of the most cost effective strategies to achieve the target.

RESEARCH VESSELS

The Department of Ocean Development has acquied Two Sophisticated Oceanographic Research Vessels: ORV Sagar Kanya (June, 1983) and FORV Sagar Sampada (Novermber, 1984). These vessels are among the most modern Oceanographic Research Vessels with advanced facilities for working in the field of physical, chemical, biological, geological and geo-physical oceanography and meteorology. 'Sagar Sampada' is a multipurpose vessel with long endurance and operational range capable of working in the 200 nautical mile Exclusive Economic Zone of India and beyond and also in the southern Indian Ocean upto 60°S Latitude. Within a short span, the department has made considerable progress and taken steps to enhance country's capabilities in Ocean Sciences area and has provided inputs to several institutions in the country.

LIVING RESOURCES

India, with a long maritime history of exploitation of living resources from the sea, occupies the Eighth Position in the World in regard to the total annual catch of fish. As per the need-based demand projections, fish requirements of India's population by 2000 AD are estimated to be 114 lakh tonnes. At present, 56 per cent of the total annual catch of about 30 lakh tonnes of fish is harvested from the seas. India with an extensive coastline of nearly 6.000 km and a Vast Exclusive Economic Zone of over 20 lakh sq km exploits about 46 per cent of the total catch of living resourcs from the India Ocean. Potential annual fish catch from the sea is estimated to be about one crore tonnes.

Systematic survey and exploration of marine living resources of the Exclusive Economic Zone of India is one of the major objectives. ORV Sagar Kanya and FORV Sagar Sampada are utilised for this purpose. Area of operation of these vessels covers the Arabian Sea, the Bay of Bengal and the Central Indian Ocean down to 20°S Latitude.

Research Vessel 'Sagar Kanya' has completed 58 cruises. Multidisciplinary studies have been carried out on board in various field of Oceanography in the Exclusive Economic Zones. Extensive studies have been conducted on primary productivity and occurrence of Zooplankton and Phytoplankton, meteorology, air-sea interaction and ocean circulation. Fisheries and Oceanographic Research Vessel 'Sagar Sampada' has completed 79 cruises. It has carried out extensive studies on Pelagic and Demersal Fishery Resources in West and East Coasts and also in the waters around Andaman Islands.

DEEP-SEABED EXPLORATION

Pioneering work was done in the area of deep seabed exploration with special emphasis on delineation of the geographical occurrence of Polymetallic Nodules on the seabed and their processing for metal extraction. Following the recognition and registration of India as a Pioneer Investor and allotment of 1,50,000 sq km mine site in the Central Indian Ocean, further research and development programmes were launched to establish the techno-economic viability of deep-seabed mining. A separate project cell was accordingly established for accelerating implementation of this programme and collaborative arrangements between the Department and CSIR Laboratories were firmed-up. A Steering Group for coordinating and intergrating the inputs from various CSIR Laboratories closely scrutinizes the pace and quality of progress made and sets targets. Steps for involving Indian Industries with research and development work associated with the deep-seabed mining programme have also been initiated. Successful laboratory scale process developments for extraction of metals from deep-seabed Nodules have been carried out at the National Laboratories—National Metallurgical Laboratory, Hindustan Copper Limited, Regional Research Laboratory and Hindustan Zinc Limited. Steps to up-scale these processes to a pilot plant scale typically handling about 250 kg nodule per day have also been taken.

HARNESSING OF WAVE ENERGY

The potential of wave energy along the Indian coasts is estimated to be 40,000 MW. A project sanctioned for the Indian Institute of Technology, Madras, to develop suitable technology for harnessing energy from wave demonstrated the same at the laboratory scale. This technology is being up-scaled by fabricating a 150 KW Experimental Wave Power Plant at Vizhinjam, Kerala and the trial runs are expected to be initiated in the middle of 1991. Attempts are being made to integrate the wave energy device along with shore development measures such as fishing harbours, where it can form a part of breakwater wall. It is also possible to integrate these devices with coastal erosion protection measures, Such an integrated and multiple approach will economise the production of electricity from Wave Power Plants.

CONTROL OF MARINE POLLUTION

Demographic pressure and rapid industrialisation has led to increased generation of wastes, and, these wastes reach the sea either directly or indirectly through rivers. This has caused pollution in the marine environment particularly in the coastal waters. Besides these sources, release of agricultural wastes containing pesticide residues and operational releases of ships and tankers containing oil, also cause pollution in the marine environment.

In order to monitor the levels of marine pollutants in a systematic manner as well as to quantify their transport rates from land-based sources to the sea, *a well-knit multi-institutional programme on Environmental Monitoring and Modelling has been launched* by establishing an Apex Centre at Regional Centre, National Institute of Oceanography, Bombay and ten units at expert institutions such as NIO, Goa and its regional centres at Cochin and Waltair, Central Salt and Marine Chemicals Research Institute (Bhavnagar), Centre for Earth Science Studies (Trivandrum), units of Central Electrochemical Research Institute at Tuticorin and Madras, Regional Research Laboratory (Bhubaneswar), Zonal Office, Central Pollution Control Board (Calcutta) and the DOD Centre in the

Andaman and Nicobar Islands. As a supportive measure for the development of suitable methodology on monitoring and modelling, DOD supported cells at Centre for Mathematical Modelling and Computer Simulation (Bangalore), Regional Research Laboratory (Trivandrum) and National Environmental Engineering Research Institute (Nagpur), have also been established. The programme, after considerable amount of generation of data, is expected to provide knowledge on behaviour of pollutants in the sea and trends on fluctuation of pollutants in the sea which will be useful in the pollution abatement measures.

ANTARCTIC RESEARCH

India entered the field of Antarctic research in 1981 and, since then, the department has sent nine scientific expeditions to the continent. Purpose and objective of the Antarctic Research is to identify and initiate studies and programmes which are of significance in scientific and economic terms and to establish infrastructural facilities and expertise which would enable India to sustain and expand its activities. Scientific Programmes of Antarctic Research include studies in Meteorology, radio wave propagation, Geology, Geo-physics, Oceanography, Marine Biology, Microbiology, Upper Atmosphere Chemistry and Glaciology, etc. Scientific work is carred out on voyages to and from Antarctica at the sites of mooring of the ship and permanently manned stations, Dakshin Gangotri and Maitri.

By virtue of its scientific activities in Antarctica, India was admitted as a Consultative Member of the Antarctic Treaty of 1959 in September, 1983. India became a member of the Scientific Committee on Antarctic Research in October, 1984. India also acceded to the Convention on the Conservation of Antarctic Marine Living Resources from 17 July, 1985.

The first Indian Expedition to Antarctica landed on the Antarctic continent on 9 January, 1982. Indian Team of 21 members from seven different institutions included Oceanographers, Meteorologists, Biologists, Geologists, Geo-physicists, radio communication experts and Naval Personnel. This expedition established a base camp named Dakshin Gangotri at Latitude 69° 59'23.12", South Longitude 11°56'26.82" East. A Meteorological Station was also set-up at the base camp to monitor weather.

The Second Indian Expedition to the Antarctica with a team of 28 members from different organisations landed on Antarctica on 28 December, 1982. Site location for a permanent station, continuation of scientific research activities initiated during the first expedition, establishment of communication links with India and reconnaissance of the areas around the base camp for future work were its major accomplishments.

The Third Expedition with a team of 83 persons including two women scientists landed on Antarctica on 27 December, 1983. A major achievement of this expedition was the establishment of a Permanently Manned Station at Dakshin Gangotri for promoting year-round scientific research work. Specific scientific programmes of contemporary interest were also undertaken by a team of 16 scientists.

The Fourth Expedition (December, 1984) had 83 members including one scientist from Mauritius. During this expedition, a direct high-frequency communication link was established. A small station consisting of three cottages in the hills at a distance of about 70 km. from Dakshin Gangotri Station was built. Additional accommodation for laboratory space and garage for parking of Snow Vehicles and storage of equipment was added to the Permanent Station.

The twelve member first wintering team, left behind by the third expédition and staying in Antarctica throughout the winter, was relieved of its duties and brought back to India. A new team of thirteen members was left behind for winter work. The Fourth Expedition also included a six-mamber team with requisite equipment and vehicles for undertaking reconnaissance work preparatory to a South Pole Expedition later.

The Fifth Expedition to Antarctica with a team of 88 members landed on 24 December, 1985. Scientific component of the expedition had 21 members including two women scientists drawn from twelve different institutions. Logistic component consisted of 67 persons from The Three Services. It returned after 69 day stay in the icy continent after accomplishing scientific and other objectives. The expedition brought back the second wintering team left behind by the fourth expedition. A 14-member new team of four scientific personnel and ten from the Services was left behind to provide logistic support for work during winter.

The Sixth Antarctic Expedition landed on 21 December, 1986. Scientific component of the team had 18 personnel for the summer and six for the winter work. Logistic support was provided by the Personnel From The Three Services. Performance of a windmill for generation of energy was tested during this expedition.

The Seventh Expedition to Antarctica returned to Goa on 26 March, 1988, after spending 70 days on the continent and leaving behind a 15-member team. Among its major achievements were geological survey of over 1000 sq.km. and collection of rock samples from the 'Humboldt Massif and Wohlthat Mountain Ranges' and investigation of the *'Ozone Hole Phenomena'*. Foundation for the Second Permanent Station at Maitri was also laid. A post office was inaugurated at Dakshin Gangotri on 26 January, 1988.

The Eigth Expedition reached Antarctica on 24 December, 1988. It included 100 personnel for varied research and logistic support. During this expedition, A Second Permanent Station 'Maitri' 70 km away from Dakshin Gangotri was established to provide a base for front-ranking scientific research. Geological mapping in the 'Wohlthat Region' was undertaken. Samples for geo-physical and geo-chemical studies, were collected. Biological Oceanographic and Meteorological Studies were conducted. Studies on Ozone Depletion were also made.

The Ninth Indian Scientific Expedition onboard 'MV Thuleland' with summer team and 42 members of the eighth expedition wintering the returned to Marmugo Harbour, Goa, on 27th March, 1990. The scientific investigations carried out during its stay at Antarctica included geo-scientific studies, atmospheric studies including ozone measurements, astro-physical studies, biological studies and studies on Polar Medicine. A green house to serve as an experimental facility for growing some vegetables and plants was also constructed at the Permanent Indian Station at Maitri.

During 1989-90, A Second Exploratory Expedition was sent to the Weddell Sea Region on Antarctica with a view to enabling our scientists gain a first-hand knowledge of another interesting part of the vast and varied terrain of Antarctica and to explore the possibility of future expansion of the Indian Scientific Programme in that area.

The department is setting-up an Antarctic Study Centre with appropriate logistic base facilities in Goa. Construction of the Centre has been undertaken.

PROGRAMME ON COASTAL ZONE AND ISLANDS

A set of other programmes, implemented in the previous plan relating to coastal areas, have been now cohered in a synergistic network to form a multi-project programme on Development of Coastal Zone and Islands. Objectives and tasks of this programme have been especially designed to create knowledge products of direct use in the development process. This is a challenging programme which would make stringent demands on a wide front of creative expertise—from Hard Science to System Design and creation of effective social inter-faces. The department is actively developing these diverse components by involving a wide-range of scientists technologists, social scientists, and state government agencies to accomplish this.

A small number of instrumentation systems have been projected for indigenous design and developments during the Eighth Plan in view of their potential applications to a wide-range of development problems. This is not a straight forward programme to implement owing to a rather poor culture for instrumentation in the country. Efforts made over the past one year in defining these programmes with the help of an Inter-Departmental Steering Committee have been showing good results.

NATIONAL INSTITUTE OF OCEANOGRAPHY

The National Institute of Oceanogrphy was established in 1966 under the Council of Scientific and Industrial Research, New Delhi. The main objective of the institute is to develop adequate knowledge related to physical, chemical, biological, geological and engineering aspects of the seas around India through: (i) study of physical processes in the ocean including monsoon; (ii) exploration of living resources of the sea; (iii) sea-farming technology; (iv) bio-active substances from Marine Plants and Animals; (v) dvelopment of offshore oilfields; (vi) deep-sea exploration for minerals; (vii) coastal zone and harbour development; (viii) studies for effective control of marine pollution; (ix) Ocean Modelling; (x) processing of Satellite Imagery Data, and (xi) Acoustic Tomography.

In addition, the institute is engaged in research and development projects for exploration and utilisation of natural resources of the sea. Its major achievements are; (i) demarcation of a prime area 3,00,000 km in the Central Indian Ocean for deep-sea mining of Polymetallic Nodules and achieving distinctions of registering India as a 'Pioneer Investor' by the United Nations and the First Country to get mining rights; (ii) exploring offshore placer deposits in Thirteen Days along Konkan Coast. These deposits mainly contain Ilmenite, an important source of Titanium and Vanadium; (iii) identification of several marine plants and animals which show promising pharmaceutical properties like anti-fertility, depressant, toxic, analgic, Anti-Viral, Spasmogenic, Diuretic, etc; (iv) identification of pollutants like hydrocarbons, pesticides and heavy metals in the Arbaian Sea and Bay of Bengal and monitoring and control of pollution in the Indian Waters; (v) understanding various water masses, upwelling, thermal structure, circulation and monsoon; (vi) locating rich fishing grounds in the Exclusive Economic Zone of India on the basis of biological and chemical studies; (vii) developing a technique for culturing green mussels on ropes from floating rafts, which has been demonstrated to fish farmers for commercial exploitation, and (viii) designing, fabrication and installation of several instruments like Databouys, Current Meter, Tide Gauge, Electronic Bathythermograph, weather station, etc., for ocean research including unmanned weather station which was commissioned at Antarctica during the First Scientific Expedition.

The Institute manages research vessel 'ORV Sagar Kanya' of the Department of Ocean Development. Oceanographic Data is maintained and managed by the Data Centre of the Institute to cater to data and information needs of user community in Marine Field. An Oceanographic Atlas of EEZ of India showing different parameters at different depths and ruise inventories of 'RV Gaveshani and ORV Sagar Kanya' were brought out for effective utilisation of oceanographic data that was collected. The institute publishes a quarterly newsletter and an Annual Report.

BIOTECHNOLOGY

To promote activities in the multi-disciplinary aspects of biotechnology, the Government of India set-up the National Biotechnology Board in 1982. This was located in the Department of Science and Technology. Subsequently, in February, 1986, the board has been replaced by a separate Department of Biotechnology in the Ministry of Science and Technology in recognition of the need for a focal point in the administration structure of the Government for planning, promotion and coordination of biotechnological programme.

MANPOWER DEVELOPMENT PROGRAMME

Properly trained manpower is as essential pre-requisite for any meaningful research programme and for the production in the field of Biotechnology.

Realising the need of properly trained manpower for supporting programmes in multi-disciplinary and fast moving areas of Biotechnology, The Department of Biotechnology, earlier the National Biotechnology Board, has evolved a very strong integrated manpower development programme. The major programmes are indicated as under: (i) The Department of Biotechnology has evolved, a model system of post-graduate and post-doctoral teaching in Biotechnology, in 19 selected universities/institutions all over the country in collaboration with the University Grants Commission, Ministry of Human Resource Development, ICAR, ICMR and Department of Ocean Development. The department has indeed played a catalytic role by establishing these model institutes and this has stimulated several other institutions/universities to establish more such institutional facilities on their own; (ii) The Department of Biotechnology has been organising short-term training courses for two to four weeks to impart practical training in various newly emerging research techniques in the multi-disciplinary area of Biotechnology. The purpose of organising the course is to re-orient the existing manpower within a short period of time to meet the immediate requirements of expanding R and D activities in Biotechnology within the country; (iii) Biotechnology associateships are awarded every year for conducting advanced research or undergoing specialised training in identified priority areas of Biotechnology within the country and abroad. It is expected that the personnel trained under this programme, can strengthen the research programmes of their institutions and also train other scientists in the respective areas and that the programme would be helpful in filling gaps in internal competence in this area and in meeting the requirements of highly skilled and trained manpower for the on-going biotechnology R&D activities in the country; (iv) VISITING SCIENTISTS FROM ABROAD PROGRAMME (VSAP); (v) TECHNICIAN TRAINING PROGRAMME; (vi) TRAINING PROGRAMME FOR INDUSTRIAL R&D PERSONNEL; (vii) TEACHING OF MODERN BIOLOGY AND BIOTECHNOLOGY IN SCHOOLS THROUGH USE OF COMPUTER SOFTWARE AS TEACHING AID; (viii) SCHOOL TEACHER'S TRAINING PROGRAMME; (ix) POPULAR LECTURES BY EMINENT SCIENTISTS AND (x) BIOTECHNOLOGY PUBLICATIONS.

INFRASTRUCTURE FACILITIES

The Department of Biotechnology has created a network of infrastructural structure facilities, for building up a strong R and D base and manufacturing capabilities. The facilities which have been set-up include: Germplasm Banks for plants, animals, Algae and Microbes, animal house, Oligonucleotide Sythesis, production and distribution of Enzymes, Reagents and radio-labelled compunds, bio-process optimisation and pilot plant etc.

IMMUNODIAGNOSTICS

The Department of Biotechnology is trying to promote research in diagnosis of diseases relevant to India in various R and D laboratories in the country. The diseases on which emphasis has been laid are Tuberculosis, Leprosy, Filariasis, Typhoid Fever, Viral Hepatitis, Diarrhoel Diseases, Amoebiasis, Malaria, Leishmaniasis, Toxoplasmosis, Brucellosis and *Schistosomiasis*, etc. The institutes being funded are National Institute of Immunology, Delhi, All India Institute of Medical Sciences, New Delhi, P.G.I.M.E.R, Chandigarh, Institute of Research in Reproduction, Bombay, Mahatma Gandhi Institute of Medical Sciences, Wardha, Institute of Chemical Biology, Calcutta, Trivandrum Medical College, Trivandrum and Cancer Research Institute, Madras, etc. A recent review has revealed that the knowledge-base developed in certain institutes was ripe for producing workable commercially viable kits for early diagnosis of Filaria, Amoebiasis, Typhoid Fever and early detection of pregnancy.

Based on the research leads already achieved at several Indian Institutes, it is expected that sensitive, reliable and in-expensive kits for the early detection of these diseases may be developed and marked during the next five years: Brucellosis, Aspergillosis, Toxoplasmosis, E. Coli Diarrhoea, Hepatitis B, Rota Virus Diarrhoea, Tuberculosis, Prostate Cancer Marker and Alpha Fetoprotein Marker, Malaria, Leprosy.

VACCINE PRODUCTION

Under the National Immunization Programme, the Department of Biotechnology has been entrusted to undertake indigenous manufacture of vaccines to achieve self-sufficiency. DBT has undertaken the following two projects to manufacture some of the viral vaccines which are not manufactured in the country and at present the Immunization Programme was dependent on imports for these: **(I) Manufacture-cum-R and D unit for Oral Polio Vaccine**

A company, namely, Bharat Immunologicals and Biologicals Corporation Limited (BIBCOL) was incorporated in March, 1989, in the Public Sector to undertake manufacture and R and D in the vaccine area. Initially, the unit will undertake *manufacture of 10 crore doses of Oral Polio Vaccine employing The Primary Monkey Kidney Culture Technology*. The USSR has agreed to provide 'technology consultancy' to this project by way of training of Indian Personnel in the Institute of Poliomyelitis and Viral Encephalitis, Moscow and also deputing USSR experts to India for assisting the Indian project team. BIBCOL is setting-up its plant in the Chola village of Bulandshahr, Uttar Pradesh. The Phase-I Activity of formulation making, quality control and distribution from imported bulk vaccine is expected to commence in 1990-91. The company has already entered the market with OPV imported from USSR and has supplied about 1 crore doses to the National Immunization Programme and **(II) Manufacturing-cum-R and D unit for Take after I'st senbence, second one Viral vaccines**

The Department of Biotechnology has incorporated a company as a joint venture, namely, Indian Vaccines Corporation Limited (IVCOL) at Gurgaon to undertake research and development and manufacture of these vaccines: Measles vaccine—two crore doses; Rabies vaccine—20 lakh doses; Inactivated Polio Vaccine—one crore doses and DPTP Vaccine (Quadruple)—four crore doses.

The unit will employ the *chick embryo fibroblast technology* for manufacture of measles vaccine, vero cell micro-carrier fermentation technology for the manufacture of rabies and inactivated polio vaccine. The unit is being set-up in technical collaboration with M/s Pasteur Merieux Serum and Vaccines, (PMSV) France.

IMMUNOLOGICAL APPROACHES TO FERTILITY CONTROL

The objective of this Immunological Approaches to Fertility control project is to develop safe, efficacious, cost-effective, long-lasting and reversible contraceptive vaccines, using immunological approaches. After the Department of Biotechnology was set-up in February, 1986, the nodal responsibility for this project has been entrusted to this department. The participating institutes in the project are: National Institute of Immunology, New Delhi, Indian Insitute of Science, Bangalore, Post Graduate Institute for Medical Education and Research, Chandigarh, Central Drug Research Instutute, Lucknow, National Institute of Health and Family Welfare, New Delhi and Institute for Research in Reproduction, Bombay. The project is being implemented through a multi-institutional task force. The National Institute of Immunology, New Delhi, has developed a candidate vaccine for female based on the *Hormone Chorionic Gonadotropic (HCG)*. The contraceptive technique developed by the institutes is based on the reduction of HCG antibodics, which results in the failure of pregnancy to be established. Phase-I trials are over. Phase-II trials are due to commence. As already established by the Indian Institute of Science, Bangalore, group immunisation of male monkeys with FSH hormone, rendered them sterile without exhibiting any adverse side effects. Phase I clinical trials have commenced. Work on the use of vitamin carrier protein as an immunological contraceptive agent in the female is also progressing satisfactorily in animal studies.

EMBRYO TRANSFER TECHNOLOGY

Under the Department of Biotechnology Project for Embryo Transfer, the infrastucture has been created throughout the country and appropriate skill pool has been generated for embryo transfer at various research organisations. The main Embryo Transper Laboratory has been established at Bidaj, Gujarat, which provided the central facilities for the project for training, research and coordination. Four Regional Centres have been set-up at Nasik, Nakerikallu, Rai Bareilly and Hassarghat. The collaborating agencies NII, IVRI, NDRI and CFSP and T.I., provide the research support in areas of Cryopreservation, in Vitro Fertilisation, Micro Manipulation, sexing, cloning and gene transfer for field application. NDDB, as a lead implementing agency, co-ordinates the overall progress of the project.

Under the DBT Project, 25 State-level centres will be created for the popularisation of the technique to benefit the farmers. So far, 108 calves and 30 buffaloes have conceived embryo transfer and 68 cattle calves and thirteen buffalo calves are born. More than 700 cattle and 128 buffalo embryos, were cryopreserved. Significant progress has been made, in terms of embryo recovery rate both in Cattle and Buffaloes. The village recovery rate in Cattle is 7.1 and 3.7 in Cattle and Buffaloes respectively. A record number of 55 embryos especially in a single flush for Jersey donor at Bidaj and 44 embryos from a cross-bred cow at Nasik were obtained, and of these, 29 and 22 were of transfer quality respectively. A herd of elite Cattle and Buffalo, developed under this project on a National Wide Basis wil be utilised for providing dairy and the related products.

AQUACULTURE PROGRAMME

Demonstration on technologically feasible and commercially viable semi-intensive Prawn Farming with the application of Biotechnology.

The DBT launched a programme on semi-intensive prawn farming with the application of Biotechnology for achieving eight to ten tonnes of Prawns per ha. per annum in two crops. The programme has been initiated in August, 1989, with the sponsorhip of MPEDA (Cochin) and with the technical knowhow of HLL and abroad.

CARP CULTURE PRODUCTION

A Research and Development project on the demonstration of intensive Carp Culture for achieving the production levels of 25 tonnes per hactare per annum has been implemented at CIFA, Bhubaneshwar. A significant breakthrough has been achieved by the successful demonstration of high-level of Carp Production which was around six tonnes per hactare in a period of six months time with the present available technology of Carp Polyculture with the Major Indian Carps including Catla, Rohu and Mrigal and there Hybrids. Under this project, certain Biotechnological Innovations such as Chromosome Manipulation, Hybrid Production, High Energy High-protein Feed Formulation, fish disease diagnosis and control and overall work on pond management are being carried out to develop technological packages to achieve much higher production per hactare per year. Other R and D programme in Agriculture are: (i) In Vitro Fertilisation and cryopreservation of embryos and larve developments of commercially important penaeid prawns and (ii). Expression of growth Hormones Genes micro-injected into eggs of economically important fishes.

R and D FOR INDIGENOUS FEED DEVELOPMENT

CROP BIOTECHNOLOGY

The Department of Biotechnology is supporting thirteen Research and Development projects in the area of crop biotechnology at present, and, expects to fund more programmes in this area in the coming years. Some of the ongoing projects are on rice dealing with the use of RFLP and allied techniques for genetics and breeding programme, regeneration of plants from protoplasts of indical rice and wide hybridization, with special reference to diversification of Cytoplasm and heterosis exploitation.

The department has also approved for implementation setting-up of Plant Molecular Biology Centres. So far, work on the three such centres has been approved. namely, CPMB at Tamil Nadu Agricultural University, Coimbatore; CPMB at Madurai Kamaraj University, Madurai and CPMB at Jawaharlal Nehru University, Delhi. These centres shall have the responsibility for both research and training and shall be linked to the existing universities and institutions. It is intended to have developments under two components in such centres: (a) infrastructure strengthening for conducting basic research in Plant Molecular Biology and (b) initiating three to four highly focussed crop based research programmes on molecular aspects related to plant tissue culture, RFLP Mapping, Chloroplast and Mitochondrial DNA Research, Molecular Biology of Mitochondria, basis of Cytoplasmic Male Sterility and transformation systems and regeneration systems.

BIOMASS USING PLANT TISSUE CULTURE

Fourteen Nationally important forest tree species have been identified for undertaking work on production of Biomass (Fuel, fodder, timber and commercial/industrial woods) using Tissue Culture Technology. Two pilot plant units have also been set-up at the National Chemical Laboratory, Pune and Tata Energy Research Institute, New Delhi. Pilot Plants will carry out large-scale micropropagation/bulk multiplication of elite forest tree species using tissue-culture techniques' with a production potential of a few million plantlets per year.

BIOLOGICAL CONTROL OF PESTS AND DISEASES

The Department of Biotechnology has established a network project on Biological Control with ten R and D sub-projects in seven centres throughout the country for the control of serious insects, pests, diseases of Sugarcane, Cotton, Chickpea, Pigeonpea, Oilseeds and vegetables. The main objective, of this network project is to lay greater emphasis on developing formulation and pilot scale agents in the farmer's field, and also for integrated pest management of key pests and diseases. It is expected that through these pilot scale product manufacturing programmes, the biocontrol agents can be later commercialised and mass produced and supplied to farmers at low-cost, at appropriate location and time-needed under IPM.

Work on these R and D projects have already been started. Following Biocontrol agents were mass produced and efficacy of the biocontrol agents for controlling the pests and diseases of various crops, was demonstrated in farmers field at multi-locations. (A) BACULOVIRUSES/MICROBIAL

CATEGORY: (i) NPV of HELIOTHIS ARMIGERS; (ii) NPV of *spodoptera litura* and (iii) GV of *chilo infuscatellus.* (B) PARASITES AND PREDATORS: (i) *chryosopa* (for control of Aphids, White Flies and Bollworms and (ii) *Trichoramma* (for control of Lepidopteran pests). (C) *Fungal/Bacterial antagonists:* (i) *trichogramma antagonists;* (ii) T. *harzianum;* (iii) T. KONINGI; (iv) *Gliocladium Virens* and (v) *B. Subtilis.*

BIOFERTILIZERS

Technologies, for Blue Green Algae and Rhizobium are currently available. However, being a living system, they need careful handling. Since the effect of Biofertilizers, is not immediately visual, it is necessary to create among the farmers and extension personnel an awareness of their ecological benefits to soil health and fertility. At present, lack of awareness and poor organized promotional efforts for large-scale production, transportation and application supported by a strong R and D base have been the major constraints in transforming the Biofertilizer Technology into a large-scale agronomic reality. Considering the above issues, the Department of Biotechnology has launched a Technology Development and Demonstration Project on Biofertilizers. The demonstration project envisages large-scale demonstration at farmers field and also a continuing feed-back mechanism to improve the product. The main objective of the Blue Green Algae Project is to develop a strong R and D base for large-scale application of Algal Biofertilizers through standardisation and process optimisation for Algal Biomass Production, genetic manipulation of algal strains for ecologically and agronomically useful characteristics development of protocols for quality assurance and retrieval and standardisation of inocula. The project has been implemented at six centres in the country, namely; (i) Madurai Kamaraj University, Madurai (ii) Agricultural University, Coimbatore (iii) College of Agriculture, MPK, Vidyapeeth, Pune (iv) Council of Science and Technology, Uttar Pradesh Secretariat, Lucknow, (v) Ramakrishna Ashram, South 24, Parganas, West Bengal and (vi) National Facility for Blue Green Algal Collections, IARI, New Delhi.

The project on Rhizobium has been taken up in two phases, the short-term and long-term. The main activity in the short-term will be process optimization, production formulation and testing. The rhizobial strains will be supplied by the National Facility for Rhizobium Gerplasm Collections at IARI, New Delhi (supported by DBT). The long-term objective would be: selection of suitable strains of Rhizobium for different crops, strain improvement, identification and use of beneficial micro-organisms, improving shelf life in different carriers, quality control, methods of inoculation and development of a mega strain for different pulses and Oil Seed legumes. The project is being implemented by IARI, New Delhi and Annamalai University, Annamalai Nagar, Madras. There are the different collaborating agencies involved in it.

OIL PALM DEMONSTRATION PROJECTS-(ODPs)

The Department of Biotechnology has launched the Oil Palm Demonstration Projects in Maharashtra, Andhra Pradesh and Karnataka. The ODP's aim is to demonstrate the feasibility of Oil Palm Cultivation under irrigated conditions over an area of about 1000 hactare in each of the three states. Field planting have already been in the above states with important and indegerous weeds.

SCIENCE-INDUSTRY CONSORTIUM IN BIOTECHNOLOGY

Recent advaces in Biotechnology World over offer enormous potential for the welfare of mankind. Close cooperation amongst the universities, R and D institutions industry and financial institutions as also several concerned Departments of the Government of India are required for the purpose of utilising the results. Biotechnology products being highly skill-based and not high investment oriented, linkages between R and D Institutions and Industry need to be established with clear aim of commercialisation.

It was therefore decided to set-up Biotech Consortium (India) Limited.

Ths scope of the Consortium would be transfer of technology, product development, feedback from market, minimizing investment of risk capital as also to supplement the efforts of existing institutions.

The Biotechnology Consortium India Limited has already been registered as a company under the Companies Act, 1956, with its registered office at Delhi. It would be a joint enterprise of the Financial institutions and industry. The R and D laboratories and the Government of India would also participate in appropriate ways.

BIOTECHNOLOGY INFORMATION SYSTEM

The Department of Biotechnology has established a national network of Distributed Information Centres (DICs) and Distributed Information Sub-Centres (DISCs) in specialised areas of Biotechnology under its Biotechnology Information System (BTIS) Programme. The present scope of the programme covers several aspects, e.g., (a) Data Capture Technologies; (b) Data banks; (c) Mathematical models; (d) Artificial intelligence/ interactive software and (e) Access to all bibliographic information on Biotechnology.

AIMS AND OBJECTIVES

(i) Its purpose is to provide a national bio-information network designed to bridge the inter-disciplinary gaps on information and to establish link among scientists in organisations involved in R and D manufacturing activities in Biotechnology. (ii) to build-up information resources, prepare databases on Biotechnology and to develop relevant information handling tools and techniques. (iii) to establish linkages with National and International databases and information centres on Commercial Terms or on exchange basis. (iv) to evolve and implement programmes on education of users and training of information scientists' responsibile for handling of Biotechnology information.

In view of the above objectives, the Biotechnology Information Systems has been established to serve as a networking and database management organisation in six identified areas involving ten specialized centres in seven cities and the associated infrastructural facilities at these locations. The distributed information sub-centres provide access points for information available at the specialised centres and also provide a mechanism to keep the databases upto date with the findings and results from their laboratories.

DEPARTMENTAL RESEARCH

A number of Government Departments carry out research in certain fields or the other. Some of them are:

MINES

Each of the organisations under the Department of Mines carries out research and development activities to their respective areas of operation. As a result, new methods of mining and improvements in quality of products and better recovery of by-products have been achieved in mining companies. Geological Survey of India carries out research, both fundamental and applied, in various branches of Earth Sciences e.g., Geochronology, Stratigraphy, Palaeontology, petrology, remote-sensing, Mineralogy, Geochemistry, Analytical chemistry and Geophysics. It is also carrying out special investigations on Geothermics, Glaciology, Seismology, etc.

Under the Science and Technology Programme, the department sponsors research and development activities conducted in its various organisations as well as in the National R and D Laboratories and Educational Institutions. These activities in mines sector cover areas of Geology, exploration, Mining, beneficiation and Non-Ferrous Metallurgy. During 1988-89, outlay for the Science and Technology programmes of the department was Rs 14.25 crore. Important components of the programme during the Seventh Plan included establishment of Jawaharlal Nehru Aluminium Research, Development and Design Centre at Nagpur, Indian Bureau of Mines Ore-Dressing Laboratory and Pilot Plant at Nagpur, Non-Ferrous Material Technology Development Centre at Hyderabad, Kolar Institute of Rock Mechanics and Ground Control, National Institute of Miners' Health and programmes for manpower training in various areas related to mining. Standing scientific advisory group of the department controls and monitors progress of S and T activities. The group has identified thrust areas for technology development in the mines sector, which include selective flocculation, development of reagents for beneficiation, optimisation of flotation circuits and automation in concentrator plants, rock mechanics and ground control, Bioleaching, technology development for Nickel Extraction, Conceptual Geological Modelling in Singhbhum, Geophysical Logging Techniques in Exploration, etc.

ALL INDIA RADIO

The Research Department of All India Radio undertakes studies in noise level in medium and high frequency bands for scientific planning of broadcasting services. It also investigates problems relating to maintenance and development of broadcasting in the country. It caters to the research need of Doordarshan as well in the field work. The activities of the Department are; (i) to undertake studies, investigation, research and development of sound and TV broadcasting networks in the country keeping in view the latest and futuristic advancements in technology; (ii) to design, develop and undertake prototype production of those equipment where production by commercial firms is not cost-effective; (iii) to provide technical support to the sound and TV broadcasting networks; (iv) to evaluate the performance of equipment supplied by indigenous firms; (v) to participate and offer expert advice on behalf of AIR and TV in the National Committees in formulating National Policies/ Standards; (vi) to particiapte and offer expert advice on behalf of AIR and TV in various International Fora including International Telecommunications Union and *its organs,* Broadcasting unions like Asia Pacific Broadcasting Union (ABU), European Broadcasting Union (EBU), etc. During the Seventh Plan, a Centre for Digital Techniques in Broadcasting was establised in the department with UNDP Assistance of about 0.57 million US dollar. During the forthcoming Eighth plan period, it is proposed to augment the centre with further assistance from UNDP to the tune of 15 lakh US dollar. The Centre for Digital Techniques in Broadcasting will be able to carry out further Research and Development works in the specialised fields of digital applications in Broadcasting and would become self-reliant by the end of the Eighth Plan Period. During the Seventh Plan Period, the department has been responsible for many technical innovations like Radio Text Transmission for Information and Education Service, Dynamic Carrier Control System to effect energy saving in high power transmitters, Computer Networking System for commercial broadcast services of AIR, development of software packages for Weather Graphic System and Paint system for the Doordarshan, software packages for field strength prediction and propagation, etc, technology in the network. A number of studies and developmental activities were planned during the period. A Centre for Digital Techniques in Broadcasting is being established with the UNDP Assistance of US dollar 5,57,650. Government has provided Rs 59 lakh for the Project.

TELECOMMUNICATIONS

Telecommunication Engineering Centre (TEC), formed after reorganisation of erstwhile Telecommunication Research Centre (TRC), continues to provide engineering support to the Department of Telecommunications. TEC in its switching wing handles on-going modernisation projects of telegraph networks, biscriptual electronic teleprinter providing telematic services, computerised fault repair assistance system development, high-speed PSTN access, pilot studies for premium data services and network planning and optimisation study projects. On transmission side, TEC is associated with various projects concening field trial, propagation studies, EMI/EMC sutdies and experiments, studies on Land Mobile Satellite System and technical advice on INSAT System and the Inter-Satellite System Interference Coordination.

RAILWAYS

Research, Designs and Standards Oganisation of the Ministry of Railways was created in 1957 by merging Central Satndards Office and Railways Testing and Research Centre, Lucknow. It has now grown into a fully equipped research organisation having experts from all disciplines of the Railways.

TEXTILES

The Ahmadabad Textile Industry's Research Association, Ahmadabad, Bombay Textile Research Association, Bombay, South India Textile Research Association, Coimbatore and Northern India Textile Research Association, Ghaziabad, were transfered to the Ministry of Textiles from I April, 1979, (then Department of Textiles in the Ministry of Commerce) in order to ensure that research programmes reflect needs and viewpoints of user industry. The main objective of these institutions is to carry out research and render consultancy services to industry on various aspects of textile technology with a view to reducing cost and improving quality and durability of fabrics, reducing pollution, conserving energy and utilising waste, adopting new technology and improving technology in decentralised sector. Government assistance is provided to these research associations under an agreed formula. Research projects are sanctioned by the Screening Committee which includes representatives of the Planning Commission and Department of Science and Technology. Important research work has been carried out recently to improve fabric quality, pollution control measures, etc.

WATER RESOURCES

The Central Water and Power Research Station, Pune, established in 1916, is the premier hydraulic research institution in India and recognised as the regional laboratory of United Nations Economic and Social Commission for Asia and Pacific in the Area of Waterways and Water-Borne Transport. Central Soil and Materials Research Station, New Delhi, established in 1954, is conducting basic and applied research in geo-mechanics and to cover such hazards do not provide a clear focus of authority to prevent or limit damages. Taking this into account, *the Government has enacted the Environment (Protection) Act, 1986, to provide a single focus for environmental issues in the Country and to overcome existing difficulties in the existing Acts. This act has been brought into force from 19 November, 1986.* Its salient features are: (a) conferring powers on the Central Government to: (i) take all necessary measures for protecting quality of environment; (ii) coordinate actions of States, officers and other authorities under this act or under any other law related to the objects of this act; (iii) plan and execute a Nation-wide Programme for prevention, control and abatement of environmental pollution; (iv) lay down standards for discharge of environmental pollutants; (v) empower any person to enter, inspect, take samples and test; (vi) establish or recognise environmental laboratories; (vii) appoint or recognise Government Analysts; (viii) lay down standards for quality of environment; (ix) restrict areas in which any industries, operations or processes may not be carried out or shall be carried out subject to certain safeguards; (x) lay down safeguards for prevention of accidents and take remedial measures in case of such accidents; (xi) lay down procedures and safeguards for handling hazardous substances; (xii) constitute an authority or authorities for exercising powers; (xiii) issue directions to any person, officer or authority including the power to direct closure, prohibition or regulation of any industry, operation or process or stoppage or regulation of supply of electricity, water or any other service. (xiv) require any person, officer, state government or authority to furnish any prescribed information, and (xv) delegate powers to any officer of a State or Authority; (b) it confers powers on persons to complain to courts regarding any violation of the provisions of the act, after a notice of 60 days to prescribed authorities; (c) the act makes it obligatory for the person incharge of a place to inform the prescribed authorities regarding any accidental discharge or apprehended discharge of any pollutant in excess of prescribed standards. Authorities, on receipt of such information or otherwise, shall take remedial measures to prevent or mitigate pollution caused by such accidents and expenses incurred by the authorities in respect of remedial measures are recoverable with interest from the polluter; (d) it prescribes stringent penalties for violation of the provisions of the act. No distinction is shown between Government Departments and other companies, and (e) jurisdiction of Civil Courts is barred under the act.

The Government has taken several steps to provide legal and institutional basis for implementation of the act. These include issue of rules, notification of standards, action regarding environmental laboratories, strengthening of State Departments of Environment and Pollution Control Boards, delegation of powers, identification of agencies for carrying out various activities for hazardous chemical management and setting up of Environment Protection Councils in the States. The Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981, have been made more stringent.

Besides this the Ministry has recently taken several new initiatives to steer the Country towards the basic premises of sustainable development and towards providing ecological security for the future.

PREVENTION AND CONTROL OF WATER AND AIR POLLUTION

The Central Pollution Control Board (CPCB) is the National Apex Body for assessment, monitoring and control of water and air pollution. The executive responsibilities for enforcement of the act for Prevention and Control of Pollution of Water (1974) and Air (1981) and also of the Water (Cess) Act, 1977, are carried out through the Board. Twenty Three States of the Union have already adopted the act and respective State Pollution Control Boards have been constituted. These States are Andhra Pradesh, Assam, Bihar, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Manipur, Mizoram, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Utter Pradesh and West Bengal. Arunachal Pradesh has adopted the act but is yet to constitute the board. Nagaland is yet to adopt the act and constitute a board. Enactment of the Environment (Protection) Act, 1986, which is the Umbrella Legislation for Enforcement or Measures for Protection of the Environment has further extended the scope of the activities of the board. Under the E(P) Act, 1986, Affluent and Omission Standards in respect of 47 Specific Industries have been notified. So far, 84 Laboratories have been recognised as environmental Laboratories. Minimum National Standards (MINAS) for pollution discharged from Specific Industries have been formulated and control measures are being implemented in a phased manner.

The Government has formulated a 'Special Action Plan.' Under this plan, the State Boards have identified the specific sources of the pollution and the quantum of discharge. The State Boards have been asked to take effective measures both for prevention and control of these discharges. The Special Action Plan includes the following:

(I) Air Pollution Control: Cement Industries, thermal power plants, iron & steel plants, fertilizer plants, Zinc Smelters, Copper Smelters, Aluminium Smelters and Oil Refineries; (II) Water Pollution Control: Distilleries (i.e. Fertmentation), Fertilizer Plants, Pulp & Paper (large & amall) Units, basic drugs manufacturing units, dyes and dye-intermediates manufacturing industries, Pesticide Manufacturing Industries, Oil Refineries, Petrochemical Industries, clusters of Tanneries, Sugar and Pharmacentical indusrtries; (III) The critical pollutants which have been identified are: Lead, Mercury, Pesticide, Carbon Monoxids, Sulphur Dioxide and Asbestos (Air pollutant); (IV) The critical river stretches which had been identified for restoration of quality are the polluted stretches of Sabarmati, Subernarekha, Godavari, Krishna, Indus (Tributaries) Sutlej, Ganga (Tributaries), Yamuna, Hindon, Chambal, Damodar, Gomati and Kali and (V) To formulates short-term result-oriented programmes, the Central Board in consultation with the State Boards, has identified 15 problem areas in the country. These are—Korba (Madhya Pradesh), Talcher (Orissa), Visakhapatnam (Andhra Pradesh), Manali (Tamil Nadu), Udyogmandal (Kerala), Chembur (Maharashtra), Vapi (Gujrat), Pali (Rajasthan), Govindgarh (Punjab), Najafgarh (Delhi), Dhanbad (Bihar) and Durgapur (West Bengal), Singrauli (U.P.), Mangalore (Karnataka) and Digboi (Assam). Intensive surveys have been initiated to assess the pollution load and quality of ambient and receiving water body in these problem areas. Assessment of pollution load, Water and Air Quality of Talcher, Visakhapatnam, Manali, Udyogmandal, Chembur and Korba Areas have already been completed.

River basin studies on Ganga, Yamuna, Damodar, Krishna, Brashmani, Baitarni, and Sabarmati have been completed. The data collected on Cauvery, Mahanadi, Mahi, Godavari, Narmada and Tapi are nearing completion.

CENTRAL GANGA AUTHORITY

The Central Ganga Authority (CGA) was set up in 1985 to oversee implementation of the Action Plan drawn up for cleaning polluted stretches of the Ganga. A Steering Committee has identified different schemes to be taken up for Uttar Pradesh, Bihar and West Bengal through which the river runs. A committee has been set up to monitor progress of schemes and its impact on the river quality.

The Action Plan proposes to divert the sewage now flowing into the river to other locations for treatment and convert it into a valuable energy source. Schemes identified for this purpose include: renovation of existing trunk rivers and outfalls to prevent overflow of sewage into the Ganga, construction of interceptions to divert the flow of sewage and other liquid wastes into river and renovation and construction of Pumping Stations and Sewage Treatment Plants to recover maximum possible resources. Smaller Schemes like construction of community toilets, conversion of dry toilets to flush toilets, construction of electric crematoria, development of River Ghats and Modernising the Solid Waste Management System were also taken up to reduce domestic waste load on the Ganga. Pollution load on the river will be reduced by 75 per cent on completion of the schemes. As against 873 MLD of domestic waste-water to be intercepted and diverted till March 1991, 370 MLD have been intercepted, diverted and treated. Besides, Pollution Abatement Schemes for the Yamuna will commence in the secend phase of the Ganga Action Plan.

CGA has taken up problems of Industrial Pollution Load on the river. Sixty-eight Gross Industrial polluters have been identified and a time-bound programme for setting up effluent treatment plants has been initiated. So far, 41 units have installed the 'ETPs and in ten units, ETPs are under installation. Nine Units have been closed down. Action has been initiated against balance eight. Existing systems of water abstraction and utilisation are under review and measures to augment flows at critical points are being identified. Action Plan has also provided a forum to protect fragile environment of the Gangotri-Gomukh Region, the source of the river.

Two Hundred and Sixty One Schemes have been sanctioned for execution with outlay of about Rs 327.20 crore. Of these, 172 schemes have already been completed. The rest are likely to be completed by December, 1992.

Quality of the river water is being monitored in collaboration with the Central Board for Prevention and Control of Water Pollution and State Pollution Control Boards. Leading National Laboratories, Institutes and Universities have been associated with different aspects of water quality, monitoring and study of physio-chemical characteristics of the river. A macro-level model for river quality has been developed and verified for the stretch of the river between Rishikesh and Patna. It will be used for simulating water quality data. At micro-level, sampling and analysis of water quality is being carried out at 27 identified locations.

Public participation is sought to be achieved by involving non–governmental organisations, pilgrims, students, elected representatives, etc.

The experience in the implementation of the Ganga Action Plan would be taken into account while formulating the National River Action Plan wherein some of the major rivers of the Country are proposed to be taken up to make them pollution free.

ENVIRONMENTAL IMPACT ASSESSMENT

The objective of all development is to add to the economic well-being of the people so that their standard of living can be improved. Development projects are, therefore, taken up to convert natural resources into goods and services. However, it has to be remembered that development activities can lead to not just the desirable but also adverse and unanticipated impacts. It is , therefore, imperative to incorporate environmental aspects into the development projects right at their inception stage to prevent the erosion of the resources base itself. Impact Assessment is a handy tool to assess the environmental compatibility of the projects in terms of their location, suitability of technology, efficiency in resource utilisation, waste recycling, etc.

Impact assessment was introduced in 1978 and now covers almost all Major Projects.

IMPACT ASSESSMENT PROCEDURE

Impact Assessment of the following projects is carried out in the Ministry of Environment and Forests: (i) Major Irrigation Projects (Command Area of 10,000 hectare and above); (ii) Hydel Power Projects; (iii) Multi-purpose River Valley Projects; (iv) Mining Projects; (v) Industries; (vi) Thermal Power Plants; (vii) Atomic Power Plants; (viii) Ports and Harbour; (ix) Transportation and Communication Projects; (x) Human Settlements, New

Towns and Cantonments; (xi) Special Projects located in Ecologically Fragile Areas; (xii) Projects in Coastal Areas and (xiii) Tourism Projects including Beach Resorts.

Under the Forests (Conservation) Act, 1980, diversion of forest land for non-forestry use, requires prior approval from the Central Government. Forest clearance is a statutory requirment and the Ministry considers such proposals on the recommendations of the State Forests Departments.

The priliminary scrutiny of the project is one by the respective technical divisions and the overall appraisal of the project is undertaken by A Specially Constituted Environmental Appraisal Committee of Experts. Scrutiny of proposals requiring diversion of forest land is undertaken by an Advisory Committee set up in the Ministry as envisaged in the Forests (Conservation) Act, 1980.

In addition, special groups/committees and Task Forces are constituted, as and when needed for expert inputs on major projects referred to the Ministry. These deliberate on the issues involved and make site visits wherever necessary.

After a detailed scrutiny and assessment, The Appraisal Committee makes its recommendations for approval or rejection of the projects. Depending on the nature of the project, certain safeguards are recommended while according environmental clearance. For monitoring and timely implementation of safeguards suggested, Six Regional Centres have been set up by the Ministry in 1988 at Shillong, Bhubaneswar, Chandigarh, Bangalore, Lucknow and Bhopal.

SINGLE WINDOW CLEARANCE

Approval of development projects has been streamlined by introducing the aspect of 'Single Window Clearance.' This implies that when a project requires both environmental clearance and approval under the Forest (Conservation) Act, 1980, proposals are simultaneously processed. All cases with complete environmental data and action plans are decided within three months. In the case of diversion of forest land, decision is taken within six weeks.

RIVER VALLEY PROJECTS

Major environmental impacts of River Valley Projects which need consideration are: (i) Degradation of Catchment Areas; (ii) Command Area Development; (iii) rehabilitation of those affected; (iv) increased incidence of water-borne diseases; (v) reservoir induced seismicity, and (vi) deforestation and loss of flora and fauna including gene-pool reserves. Only 1,100 sq km of Catchment area had been treated upto the Fifth Plan against the estimated 15 lakh sq km area covering 59 Major Projects. Similarly, Command Area Development has more or less been the responsibility of the farmers who have neither technical knowhow nor financial capability to undertake necessary land-levelling, grading and drainage operations to fully utilise irrigation potential.

Introduction of perennial irrigation results in increased incidence of water-borne diseases like Malaria, Filaria, Schistosomiasis, etc. Preventive measures and health delivery system become all the more important in rural areas where this is introduced.

Most of the River Valley Projects result in submergence of large tracts of forests, destroying flora and fauna and Rich Biological Wealth-Genepool Reserves in some of the evergreen forests are threatened because of destruction which usually accompanies the submergence caused by such projects. The gene-pool Reserves are critical for survival of human race as they provide not only necessary immunity against Pests and Diseases affecting the high-yielding Cereals, Vegetables and Food Crops but also help develop new varieties.

MINING PROJECTS

Major Environmental Impacts of mining operations are: (i) degradation of land; (ii) Pollution of Surface and Ground Water resources; (iii) pollution of air; (iv) deforestation including loss of flora and fauna; (v) rehabilitation of affected population including tribals, and (vi) impact on historical monuments and religious places.

A major component of the mining operations in India is the 'Opencast Mining' which severely affects land use pattern. Mining operations have serious adverse impact on the growth of vegetation and general landscape.

Minerals extraced interact with surface and Ground Water and Mine Water, if Acidic/Toxic Pollute Water Resources. Loss of Top Soil due to deforestation also depletes Ground Water Resources and results in drying up of perennial sources like springs and streams especially in hill areas.

THERMAL POWER PROJECTS

Major environmental impacts of Thermal Power Projects include: (a) Air Pollution; (b) Water Pollution; (c) deforesation; (d) rehabilitator and (e) Land Degradation. Fuel Gasses emerging from stacks containing Sulphur Dioxide, Oxides of Nitrogen, Carbon Monoxide, etc., are detrimental to human-beings and vegetation. Water Pollution from Thermal Stations can be due to release of Slurry which is mixture of Fly Ash and Water. Thermal Pollution is due to release of cooling water which can affect Aquatic Life. Solution to disposal of Ash problem is in its recycling by converting it into building blocks and its use in other construction works. Another step which helps in abating pollution caused by Ash is stabilisation of Ash Dumps through suitable vegetation.

INDUSTRIAL PROJECTS

Major environmental impacts of Industrial Projects include (a) Air Pollution; (b) Water Pollution, and (c) disposal and utilisation of solid waste. Impacts of projects in specific areas are examined in great details and suitable control measures suggested. Linkages of project requirements to utilisation of resources in an optimal way is an essential pre-requisite. Concept of recycling, reuse and adoption of clean technologies is increasingly becoming pre-dominant.

TRANSPORTATION SECTOR

Projects considered under the Transport Sector include laying of Railway Lines, Roads and Bridge Construction, Airport Construction establishing of Ports and Harbours.

The environmental parameters affected by the Transport Projects have been classified in four broad categories: (i) Natural Physical Resources; (ii) Natural Ecological Resources; (iii) Human/Economic Development Resources; and (iv) Quality of Life Values including Aesthetic and Cultural Values.

Adverse impacts on above environmental parameters are to be identified and mitigation measures provided for to offset such impacts.

COASTAL AREA MANAGEMENT

To project cultural, aesthetic the and ecological values in the Coastal Areas, a directive has been issued to Coastal States by the Government banning construction activities within 500 metres of high-tide line. This has been done to ensure that indiscriminate construction activities do not result in serious environmental impact in such areas.

As a statutory back-up to this directive and to provide a uniform approach in Coastal Management and Protection, the Government has initiate modalities for Policy Decisions for Direction under the Environmental (Protection) Act, 1986.

NUCLEAR POWER PROJECTS

In Nuclear Power Plants, safety from radiations during the operation of the plants and after disposal of Nuclear Wastes, is of prime concern. Major environmental impacts of Nuclear Power Projects which need consideration are; (i) Radio-active Contamination of Air, Water and Soil; (ii) Thermal Pollution due to discharge of Cooling Water (iii) Deforesation and loss of flora and fauna; (iv) Rehabilitation and (v) Radio-active Waste Disposal. Exposure to Radio-active Radiations in excess of the prescribed dose limits are detrimental to human beings, Aquatic Life, flora and fauna. Thermal Pollution due to release of Cooling Water can adversely affect the Aquatic Life. The long half life periods for radioactive decay necessitate sealing of the reactor vessel and components for dormant period of about 30 years after decommissioning of the plant.

GUIDELINES AND QUESTIONNAIRES FOR ENVIRONMENTAL CLEARANCE

To help the project proponents for in-house evaluation of their projects from environmental angle and to elicit specific information on environmental aspects as required for environmental clearance, the Ministry of Environment and Forests has prepared guidelines and questionnaires for the following sectors: (i) River Valley Projects; (ii) Thermal Power Projects; (iii) Mining Projects; (iv) Industries; (v) Ports and Harbour Projects; (vi) Development of Beaches; (vii) (a) Rail/Road/Highway Projects; (viii) Airport Projects; (ix) Communication Projects; and (x) New Towns.

Guidelines for Tourism Projects are also being finalised. In accordance with the Recently Promulgated Coastal Zone Regulations, all the Seven Coastal States are required to prepare Coastal Management, plans which inter alia would provide protection to Ecologically Fragile Coastal Belts, estuarine the coastal areas rich in biological diversity and provide for Landuse Zoning.

ECO-REGENERATION AND DEVELOPMENT

Eco-Task Forces of Ex-servicemen have been deployed for undertaking eco-restoration work through Afforesation and Soil Conservation Measures in selected highly degraded and inhospitable areas of the Country. Major Field Demonstration Projects for Integrated Eco-development have been undertaken in Pushkar Valley; Ajmer; Binasar and Ranikhet in Uttar Pradesh Hills, Marathwada areas of Maharashtra, Coimbatore (Tamil Nadu) and in Purulia District of West Bengal.

Govind Ballabh Pant Institute for Himalayan Environment and Development has been set up at Almora (U.P.) with its units at Srinagar (Garhwal), Gangtok (Sikkim) and Nagaland. The main task of the institute is to undertake indepth research and development studies on environment problems of Himalayan Region and Shivalik Ranges and to demonstrate suitable technology packages for restoration of degraded eco-system.

BIOSPHERE RESERVES

Biosphere Rserves, the Multi-purpose Project Programmes to preserve the the genetic diversity in representative eco-systems. The major objectives of Biosphere Reserves are: (i) To conserve diversity and integrity of plants, animals and micro-organisms: (ii) To promote research on ecological conservation and other environmental aspects; and (iii) to provide facilities for education, awareness and training.

As per recommendations of a Core Advisory Group set up by the Government of India in 1979, 14 potential sites were identified for setting up of Biosphere Reserves in the country. So far, the following seven Biosphere Reserves have been set up: (i) Nilgiri; (ii) Nanda Devi; (iii) Nokrek; (iv) Great Nicobar; (v) Gulf of Manar; (vi) Manas and (vii) Sunderbans.

Comprehensive guidelines have been proposed for implementation of the Biosphere Reserve Programme in the Eight, Five-Year Plan with emphasis on the following (i) gearing up of the research activities; (ii) monitoring of performance in the field; (iii) building up of massive public awareness by involving NGOs; (iv) regular manpower training programmes; (v) bilateral programmes between India and USSR, USA, Mexico, UK and Canada and (vi) use of latest technologies like remotesensing in carrying out the studies in the Biosphere Reserves.

WETLANDS

India has a wealth of Wetland Ecosystems distributed in different Geographical Regions ranging from cold arid zone of Ladakh to wet humid climate of Imphal; warm arid zone of Rajasthan to Tropical Monsonic Central India; and wet and humid zone of Southern Peninsula. Most of the Wetlands in India are directly or indirectly linked with the Major River Systems like the Ganga, Brahamputra, Narmada, Tapti, Godavari, Krishna, Cauveri, etc.

Several significant steps have been initiated for conservation and management of Wetlands. A National Wetland Management Committee has been constituted for advising the Govenment on appropriate policies and measures to be taken for conservation and management. The National Wetland Management Committee has identified 16 Wetlands on piority basis for conservation and management. Steering Committees have been set up by the concerned State Governments in which represenatives of State Government Departments, Universities and Research Institutions are represented. Nodal Research/Academic Institutions have been identified for each of the selected Wetland.

A Directory on Wetlands of India has been published which gives information on location, area and ecological categorisation of Wetlands in different parts of the Country.

MANGROVES

Mangroves are very specialised forest eco-systems of tropical and subtropical regions of the World bordering the sheltered sea coasts and estuaries. They stabilise the shoreline and act as bulwark against encroachments by the sea. Mangrove Forests are dominated by salt tolerant inter-tidal Halophytic Sea Plants of diverse structures.

Mangroves occur all along the Indian Coastline in sheltered estuary, tidal creeks, backwaters, salt marshes and mudflats covering a total area of 6,740 sq kms which is about seven per cent of the World's Total Mangrove Area. The Mangroves in India have been subject to immense Biotic Pressures and ruthless exploitation.

Realising the importance of Mangroves, a scheme for conservation and management of Mangroves was initiated by the Ministry. A National Mangrove Committee was constituted to advise the Government on appropriate policies and implementation of the programme for conservation of Mangroves. Based on the recommendations of the committee, the following 15 Mangrove Areas have been identified: (i) Northern Andaman and Nicobar (Andaman & Nicobar Islands) and (ii) Sunderbans (West

Bengal), Bhatarkanika (Orissa), Coringa, Godavari Delta and Krishna Estuary (Andhra Padesh), Mahanadi Delta (Orissa), Pichavaram and Point Calimere (Tamil Nadu), Goa (Goa), Gulf of Kutch (Gujarat), Coondapur (Karnataka), Achra/Ratnagiri (Maharashtra and Vembansd (Kerala).

CORALS AND CORAL REEFS

Four Coral Areas have been identified viz., Gulf of Mannar in Tamil Nadu, Andaman & Nicobar Islands in Andaman and Nicobar, Lakshadweep Islands in Lakshdweep and Gulf of Kutch in Gujarat. Concerned State Governments have been asked to prepare Management Action Plans and also set up Steering Committee for intaking the management of Corals in the respective areas. The Mangrove Commitee, existing at the State Level, will also help in Conservation Programmes of Coral Reefs of the concerned State.

NATURAL RESOURCE MANAGEMENT SYSTEM

The basic aim of the Natural Resource Management System is to utilise a remote-sensing techniques' for Optimum Management of Natural Resources. In persuance of this, eleven projects were funded to monitor environmental changes asociated with mining, industrialisation, urbanisation and other developmental activities. The overall approach was to identify critical areas and to help developing strategies for developmental plannings of these areas. The main activities include convening meetings of Standing Committee on Bio-resources and Environment, evaluation of projects undertaken and sanctioning of new projects.

NATIONAL WASTELANDS DEVELOPMENT BOARD

The National Wastelands Development Board (NWDB) was established in May 1985 with the primary objective of undertaking Wastelands Development through a massive programme of afforesation and tree planting with the people's participation. During the Seventh Plan Period, an equivalent of 88 lakh hectare of public and private lands was covered through various schemes implemented through the State Governments and Non-Government Organisations.

The Wastelands Development Programme was reviewed towards the end of the Seventh Five-Year Plan. It was found that the programme did not adequately address the issues with regard to developing a thrust in favour of fuelwood and fodder production. Also, problems of land degradation and deforestation had not been adequately addresed and people's participation had remained limited. Accordingly, the National Mission on Wastelands Development was launched with the goal of checking land degradation and helping to restore the ecological balance on the one hand and putting wastelands to sustainable use especially with a view to increase Bio-mass availability, in particular fuelwood and fooder, on the other. The

National Wastelands Development Board was given the responsibility for the Wastelands Development Programme with a mandate of enlisting people's participation, harnessing the inputs of science and technology and achieving the requisite inter-disciplinary coordination in the planning and and implementation of the pogramme.

The composition and role and functions of the board were modified suitably to enable it to achieve the stated goals. The Minister in charge of the Ministry of Environment and Forests is the Chairman of the NWDB and the Secretary of the Ministry of Environment and Forests is the Member Secretary. The board also includes Non-officials and representatives of the State Government and the concerned Central Government Departments.

The board has taken a number of new initiatives. Policy Advisory Groups have been set up to develop policy packages' on important issues like Grazin and livestock management, fuelwood conservation, wood substitution, benefit distribution from common lands, institutional finance for Farm Forestry, etc. Similarly, to harness the inputs of Science and Technology, an Inter-disciplinary Technical Advisory Group has been set up to help identify research gaps and to provide technology extension. A new planning methodology has been adopted to enable preparation of Village-Level Action Plans thorough people's own institutions, with funding and other support coming from the concerned Goverment Departments. Such plans have been taken up in 25 Districts so far on a Pilot Basis and a major effort of the NWDB during the Eighth Plan Period will be to ensure the necessary dovetailing of all Wastelands related schemes implemented by the various departments to develop the necessary system at the village level and to ensure community participation in the real sense.

The NWDB has also launched some new schemes. It also coordinates, on behalf of the Government of India, externally aided Social Forestry Projects in 14 states of the country. The schemes and projects are aimed at achieving the general goals of the Watelands Development Programme and includes elements like tree planting, silvi-pasture development, soil and water conservation, agro and farm forestry, natural regeneration, degraded forests, etc.

WASTE MANAGEMENT

The Ministry constituted a National Waste Management Council to suggest ways and means for effective utilisation of waste generated in the Country. Three Sub-groups were set up by the council to deal with the the major categories of wastes viz., industrial/urban/rural. The Sub-groups were entrusted with the task of identifying wastes, suggesting technological alternatives for reduction recycling and reuse of waste and to formulate action points including Legislation, Taxes and Incentives. The report of the Sub-groups have been considered by the council and it has been proposed to set up a 'Clean-up Fund' and devise scheme for waste disposal in clean cites on a Pilot Basis.

MANAGEMENT OF HAZARDOUS SUBSTANCES

The Ministry is the nodal agency for the management and control of hazardous substances which include hazardous chemicals, wastes and micro-organisms and chemical and biological disasters. In pursuance of these activities, rules for: (i) the Manufacture, Storage and Import of Hazardous Chemicals, 1989; (ii) Hazardous Wastes (Management and Handling) Rules, 1989 and (iii) manufacture, Use, Import, Export and Storage of Hazardous Micro-organisms/Genetically Engineered Organisms or Cells, 1989, were notified under the Environment (Protection) Act, 1986.

The Rules for the manufacture, storage and import of hazardous chemicals provide for notification and listing of hazardous chemicals, sitting of hazardous installations, taking preventive and control measures for major accidents and a few stipulations for import of hazardous chemicals. In the Motor Vehicles (Amendment) Rules, 1989, a set of rules for transportation of hazardous chemicals by road, have been suggested for incorporation.

The Hazardous Wastes (Management and Handling) Rules control generation, collection, separation, storage, transportation, treatment, recovery and disposal of hazardous wastes. Import of hazardous wastes from other Countries purely for dumping and disposal in our Country has been totally banned.

Rules for the manufacture, use, import, export and storage of hazardous micro-organisms/genetically engineered organisms or cells have been prepared in consultation with the Department of Bio-Technology (DBT) who have drafted safety guidelines and have suggested procedures for safe handling or hazarous micro-oganisms/genetically engineered organisms.

A Crisis Management Plan has been worked out to meet Chemical Emergencies in units handling hazardous chemicals. The plan provides for a Three-tier System, i.e., establishment of crisis groups at the Central, State and District or Local Levels. A control room has been set up in the Ministry to deal with an emergency caused due to hazardous chemicals. There is also an arrangement for receiving messages round-the-clock. Guidelines for prepartion of Crisis Management Plans have been issued to the State Governments and financial support is being provided to them.

India is a signatory to UNEP Sponsored Convention on Control of Trans-boundary Movement of Hazardous Wastes which has been adopted at Basel, Siwtzerland, by 126 Governments of the World in 1989. The convention aims at checking the reported illegal traffic in hazardous wastes from one Country to another.

Rules for prohibition on handling of hazardous chemicals have been notified under Section six (ii) (d) of Environment (Protection) Act, 1986. A notification for prohibition on use of Benzidine and Benzidine Based Dyes and its Salts has been issued. A proposal to ban Penta Chlorophenol PCB for use in leather is under consideration.

Documented safety information on hazardous chemicals is being compiled. Status papers on Asbestos and Chloroflourocarbons have been prepared.

A Public Liability Insurance Bill has been enacted to provide immediate relief to the victims of accidents caused by hazardous chemical industries.

FORESTS

Forests are a renewable source and contibute substantially to economic development. They have a major role in enchancing quality of environment. The Country has an area of 752.3 lakh hectare notified as forests. Of this, 406.1 lakh hectare area is classified as reserved and 215.1 lakh hectare as protected. Unclassified Forest Area is spread over 131.1 lakh hectare. About 19.47 per cent of the total geographical area is under actual forest cover.

FOREST POLICY AND LAW

India is one of the Few Countries which has a Forest Policy since 1894. It was revised in 1952 and again in 1988. The main plank of the revised Forest Policy of 1988 is protection, conservation and development of forests. Its aims are: (i) maintenance of environmental stability through preservation and restoration of ecological balance; (ii) conservation of natural heritage; (iii) check on Soil Erosion and denudation in catchment area of rivers, lakes and reservoir; (iv) check on extension of Sand Dunes in Desert Areas of Rajasthan and along coastal tracts; (v) substantial increase in forest/tree cover through massive afforesation and Social Forestry Programmes; (vi) steps to meet requirments of fuel wood, fodder, Minor Forest Produce and soil timber of rural and tribal populations; (vii) increase in productivity of forest to meet the National Needs; (viii) encouragement of efficient utilisation of forest produce and optimum substitution of wood, and (ix) steps to create massive people's movement with involvement of women to achieve objectives and minimise pressure on existing forests.

Recognising the urgent need to halt dangerous trends where forests have reached a stage of regression very near the irreversible threshold, The Department is giving a new orientation to entire gamut of forests-related activities. Some of the important areas for immediate effective protection of forests include afforestation and Development of Wastelands, Reforestation and replantation in existing forests, forest settlement, restriction on grazing, encouragement for wood substitutes and supply of other kinds of fuel, elimination of forest contractors, discouragement of Mono-culture Practices. etc.

FOREST CONSERVATION

The increasing destruction and degradation of forests and treelands especially in the Himalayas and other hill areas, is leading to heavy erosion of Top Soil, erratic rainfall and recrurring floods. It is also causing acute shortage of fire-wood and, what is more important, loss of productivity due to eroded and degraded lands. The Forests (Conservation) Act, 1980, enacted primarily to check indiscriminate deforestation/diversion of forest lands for non-forestry purposes, was amended in 1988 to make it more stringent by prescribing punishment for violations. Rate of diversion came down considerably after the enactment of this act as compared to 1.5 lakh hectare per annum earlier.

Another area of concern has been degradation of forests due to Biotic Pressure. Guidelines have been framed for preparation of Working Plans and felling in forests. Some of the salient features are: (i) working plans should be up-to-date and stress conservation (ii) preliminary working plan should have a multi-disciplinary approach; (iii) tribal rights and concessions should be high-lighted along with control mechanisms; (iv) grazing should be studied in detail and specific prescriptions should cover fodder propagation; (v) shifting cultivation and encroachments need to be controlled; (vi) clear-felling with artifical regeneration should be avoided as far as possible and clear-felling blocks should not exceed ten hectare in hills and 25 hectare area in plains, and (vii) banning all felling above 1,000 metre altitude for a few years should be considered to allow these areas to recover. Critical areas in hills and catchment areas prone to landslips, erosion, etc., should be totally protected and quickly afforested.

The Government has recently set up a National Forest Fund. Initially, its funds will be used for unemployed youth, Ex-servicemen, tribals, etc., for planting trees on Users' Lands.

Guidelines have been issued in June, 1990, to the State Governments for involving village communities and voluntary agencies for regenration of degraded forest lands on usufruct sharing basis.

FIREWOOD

Firewood occupies a pre-dominant place as an energy source in rural areas. As against estimated requirement of about 15.7 crore tonnes of fuel-wood per annum, recorded production is only 5.8 crore tonnes. Due to scarcity of firewood, considerable quantities of cowdung and agricultural residues are burnt as fuel. It is expected that programmes of renewable energy sources and augmenting fuel growth in Wastelands will help in closing the gap.

FOREST FIRE CONTROL

A project aimed at the prevention, detection and suppression of forest fire has been launched with the United Nation's Development Programme Assistance. Ground Fire Suppression System including hand-tools, mechanised equipment and water-handling equipment, helicopters, etc., are used to suppress forest fires in project areas.

WILDLIFE

The National Wildlife Action Plan adopted in 1983 provides the framework of strategy as well as programme for wildlife conservation.

At present, protected area network comprises 70 National Parks and 412 Sanctuaries covering 4.5 per cent of the total geographical area of the country. It is proposed to be increased to 4.6 per cent by setting up more parks and sanctuaries.

The Wild Life (Protection) Act, 1972, adopted by all states except Jammu and Kashmir (which has its own act), governs wild life conservation and protection of endangered species. The act prohibits trade in rare and endangered species. India is also a signatory to the Convention on International Trade in Endangered Species of Wild Flora and Fauna. Under this, export or import of endangered species and their products is subject to strict control. Commercial exploitation of such species is prohibited. The Centre provides financial assistance to states for: (i) strengthening management and protection of infrastructure of National Parks and Sanctuaries; (ii) protection of wildlife and control of poaching and illegal trade in wildlife products; (iii) captive breeding programmes for endangered species of wildlife; (iv) wildlife education and interpretation; (v) development of selected zoo's, and (vi) conservation of Rhinos in Assam. A bill to comprehensively amend the Wildlife (Protection) Act, 1972, has been introduced in the Parliament.

RESEARCH PROMOTION

ENVIRONMENTAL RESEARCH PROGRAMME

The programme aims to develop strategies for sustainable resource management and create facilities and trained manpower to conduct research in priority areas. Major Schemes include: (a) Integrated Action-oriented Eco-development Research and Extension Programme in the Himalayan Region, Western Ghat, Eastern Ghat and Kaveri Basin and (b) All India Coordinated Research Projects on Ethnobiology, Air Pollution and Plants and Conservation of Endangered Plant Species (Seed Biology and Tissue Culture). A number of Small Location Specific Research Projects have also been initiated.

Expert Committees and Expert Working Groups make recommendations for undertaking research in priority areas, scrutinise research proposals, evaluate progress and recommend suitable mechanisms for implementation of the research projects.

Priority areas of research are identified in five fundamental elements *viz.* land, water, air, space and energy.

To strengthen the environmental research and training base, 'Centres of Excellence' have been set up. Presently, there are Five Such Centres namely, Centre of Ecological Sciences, Bangalore; Centre of Mining Environment, Dhanbad, Centre of Environmental Education, Ahmedabad and Centre of Ornithology and Natural History Bombay and C.P.R. Environmental Education Centre, Madras.

FORESTRY RESEARCH

Forestry research is the primary responsibility of the Indian Council of Forestry Research and Education. It oversees various activities in forestry research and related education.

It has Six Forestry Research Institutes in different Eco-geographical Regions of the Country. These are: (i) Forestry Research Institute, Dehra Dun; (ii) Institute of Arid Zone Forestry Research. Jodhpur; (iii) Institute of Deciduous Forests, Jabalpur; (iv) Institute of Wood Science and Technology, Bangalore; (v) Institute of Rain and Moist Deciduous Forests, Jorhat, and (vi) Institute of Forest Genetics and Tree Breeding, Coimbatore, conducting National Level Research on different aspects of forestry keeping regional needs into consideration.

WILDLIFE RESEARCH

Research programmes in wild life are carried out by the Wildlife Institute of India, Dehra Dun. Research projects involving habitat evolution, elephant movement, ecology of gharials and turtles, status of endangered species, animals, etc, are carried out.

EDUCATION, AWARENESS AND INFORMATION

Priority is accorded by the Ministry to promote environmental education, creation of environmental awareness among various age groups of the Country's Population through several progammes and Mass Media Campaign as well as to disseminate environmental information though Environmental Information System (ENVIS) Network to all concerned. Special emphasis has also been given to non-formal education through Seminars/Symposia/Workshops, training programmes, eco-camps, audio-visual shows etc.

The Ministry has been organising a National Environment Awareness Campaign (NEAC) since July, 1986, to create environmental awareness at the National Level. As a part of this Campaign, 19, November to 18 December every year is observed as the National Environment Month (NEM). All target groups like students/youth, teachers, women, tribals, administrators, professionals, Legislators, industrial workers, Armed Forces and the general public are covered under this campaign.

The National Museum of Natural History (NMNH) which was set-up in New Delhi in 1972, is concerned with the promotion of non-formal education in the area of environment and conservation. The objective of the museum is achieved through its permanent exhibit galleries, temporary exhibitions and a large number of educational programmes and activities for the teen-agers as well for the school children.

Education in Forestry is being conducted in 14 Agrilcultural Universities of the Country. Indira Gandhi National Forestry Acadmey, Dehra Dun, continues its primary task of training Indian Forest Service (IFS) professionals. Besides, State Forest Service Colleges also provide training to the Officers of the State Forest Services (SFS). Indian Council of Forestry Research and Education (ICFRE) oversees forestry education in the Country. The Indian Plywood Research Institute, Bangalore, also organised short-term courses in the area of Wood sciences. Besides, Indian Institute of Forest Management, Bhopal, also provides training in the management and allied subjects to persons from the Indian Forest Service, State Forest Service, Forest Development Corporations, and forest related industries to develop forestry management skills. The Wildlife Institute of India, Dehra Dun conducts Various Programmes of Wildlife Education and Training in the Country.

An Environmental Information System (ENVIS) which was set up in 1982, in the Ministry caters to the information needs of policy-makers, decision-makers, research workers and the general public. A Network of 10 ENVIS Centres in the specific subject areas like pollution control, toxic chemical, coastal & off-shore ecology, occupational health and ecology and environment, etc., in the selected institutions of the Country are functioning under the programme. More new ENVIS Centres in the specific subject areas are being set up in phases to cover multi-disciplinary aspects of environment. *ENVIS publishes a quarterly journal entitled "Paryavaran Abstracts" which reports countrywide research inputs of environment. Besides, ENVIS also acts as a National Focal Point (NFP) and as a Regional Service Centre (RSC) for South Asia Sub-Region of INFOTERRA (A Global Information Network) of United Nations Programme (UNEP)* Enviornment NFP and RSC of INFOTERRA ENVIS provides substantive information to both National and International Queries on environment and related issues.

To encourage and recognise excellence in every branch of research related to environmental sciences, the Ministry instituted a Pitambar Pant National Environment Fellowship Award in 1978. It has also instituted another *National Award entitled, Indira Gandhi Paryavaran Puraskar (IGPP) since 1987 and is awarded annually to any Indian Organisation of individuals for their significant contributions in the field of environment.* The award carries a value of one lakh and a trophy. Besides, the Ministry has also instituted, since 1986, another Annual Award Entitled *"Indira Priyadarshini Vrikshamitra Award" to give recognition to the exceptional contribution of individuals and organisations in the field of Afforesation and Wastelands Development.* The Vrikshamitra Awards carries an amount of Rs 50,000, a medalion and a citation.

INTERNATIONAL COOPERATION

The Ministry functions as a nodal agency for UNEP, South Asia Cooperation Environment Programme (SACEP) and International Centre for Integrated Mountain and Development (ICMOD). It is also the nodal point of interaction with various International Agencies, Regional Bodies and Multilateral Institutions. It coordinates all bilateral Cooperation in the field of environment. India has such Cooperation programmes with the Netherlands, Norway, Sweden, Denmark, Great Britain, the USA, the USSR, Canada, Japan and FRG in addition to the Social Forestry Programmes with external assistance.

The Ministry is playing a coordinating role in deliberations on global environmental problems such as depletion of Ozone Layer, Green House Effect and global warning and climate change trans-boundary movement of hazardous chemicals and chemical wastes.

India is a signatory to the World Heritage Convention and the Ministry deals with the natural sites inscribed in this convention. Keoladeo National Park, Sunderbans National Park, Kaziranga National Park, Nand Deve National Park and Manas Wildlife Sanctuary have been inscribed on the World Heritage List. India is a member of the Convention of Internaional Trade in Endangered Species, International Whaling Commission, Antartica Treaty and Convention on Migrtory Species. It is also a party to a number of other international agreements for protection of flora and fauna.

The Ministry is also actively involved in the Preparatory Committee Meetings of the Forthcoming U.N. Conventions on Environment and Development and Bio-diversity. Prepartions for the UN Conference on Environment and Development, 1992, have started in earnest. *India has got Developing Countries together in 1990 to discuss the approach to this.*

AWARDS FOR PREVENTION AND CONTROL OF POLLUTION

National Awards have been instituted for public recognition of outstanding activities for the prevention and control of pollution by the Ministry.

NATIONAL BIRD

The Indian peacock *Pavo Cristatus (Linnaeus)*, the National Bird of India, is one of the most beautiful birds particularly the males having glistening blue neck, breast, fan-shaped vest and long magnificent tail. Courtship Dance of the male by fanning-up the tail before the female is most spectacular. From time immemorial, Peacock has found a profound place in Indian Literature, Folklore and Legend.

Peacock is widely found in the Country in south and east of Indias, Jammu and Kashmir, Assam, South of Mizoram and the Whole of Indian Peninsula. It is fully protected under the Indian Wild Life (Protection) Act, 1972.

NATIONAL ANIMAL

The Majestic Tiger *Panthera tigris (Linnaeus)*, the National Animal of India, has always been held in high-estem for its rich colour, illusive design and formidable power. Among carnivores, Tiger is very gorgeous and attractive with roaring voice as a symbol of power. Out of eight races of the species known the world over, Indian Race is *Royal Bengal Tiger*. It is found throughout the Country and also in Nepal, Bhutan and Bangladesh. To check the dwindling population of Tigers in India, which came down to only 1,827 in 1972, the Project Tiger was launched on 1 April, 1973. Since then, its population is gradually increasing. The present Tiger Population in the country is 4334.

9 Health

HEALTH and human development form integral components of overall socio-economic development of any nation. Under the Constitution, public health and sanitation and hospitals and dispensaries fall in the State List. Population control and family planning, medical education, adulteration of foodstuffs and other goods, drugs and poisons, medical profession, vital statistics including registration of births and deaths, lunacy and mental deficiency are in the Concurrent List.

Union Ministry of Health and Family Welfare plays a vital role in the national efforts to help citizens lead a healthy and happy life. The Ministry is responsible for implementing programmes of national importance like family welfare, primary health care services, prevention and control of diseases, etc. which form the main plank of our development efforts. Also, our national commitment is to attain the goal of 'health for all by the year 2000 AD' in accordance with the Alma-Ata Declaration of September 1978.

HEALTH PLANS

The broad objectives of the health programmes so far have been to control and eradicate communicable diseases and to provide curative and preventive health services in rural areas through the establishment of a primary health centre in each community development block and to augment programmes for the training of medical and para-medical personnel. In the overall health development programmes, emphasis is being laid on preventive and promotive aspects by organising effective and efficient health services. There is now a number of training centres for different categories of health workers i.e. nurses, sanitary inspectors, para medical workers, non-medical supervisors, physiotherapists, etc. The plan of action on the Report of the Group on Medical Education and Support Manpower for a three-tier reconstruction of entire health care system has been worked out. The scheme of involvement of community level workers i.e., teachers, postmasters and gram sevaks,is also being implemented. Government is extending financial assistance to voluntary organisations/institutions under grant-in-aid schemes i.e., scheme for improvement of medical services, special health scheme for setting up new hospitals /dispensaries in rural areas and extension of existing hospital buildings and also for purchase of equipment. Apart for this, financial assistance is also given to voluntary organisations for voluntary blood donation programme.

The pattern of investment in defferent Plan periods is given in table 9.1.

TABLE 9.1 PATTERN OF INVESTMENT

(Rs crore)

Plan Period	Total Plan Investment/ Outlay	Plan investment on Health	Investment in Health as percentage of Total
First Plan	1,960.00	65.20	3.30
Second Plan	4,672.00	140.80	3.00
Third Plan	8,576.50	225.90	2.60
Annual Plans	6,625.40	140.20	2.10
Fourth Plan	13,778.80	335.50	2.10
Fifth Plan	39,426.20	760.80	1.90
Annual Plan	12,176.50	223.10	1.82
Sixth Plan	97,500.00	1,821.10	1.86
Seventh Plan	1,80,000.00	3,392.89	1.88
Annual Plan (1985-86) Actuals	33,059.09	579.90	1.80
Annual Plan (1986-87) R.E.	40,260.07	683.10	1.70
Annual Plan (1987-88) Actuals	42,920.50	724.30	1.70
(1988-89) R.E.	49,442.90	837.50	1.70
(1989-90) Outlay	57,592.50	937.80	1.60

ACHIEVEMENTS

Planned development in over three decades has resulted in vastly improved health facilities. The number of doctors and hospital beds has increased by more that two and a half times and that of nurses by more than six times. The number of medical colleges has increased from 30 before the initiation of the First Plan to 128 at present. In rural areas, there were 20,531 primary health centres/subsidiary health centres and 1,30,390 sub-centres as on 31 March, 1990. None existed before 1951. Diseases like malaria, tuberculosis and cholera, which used to take a heavy toll of life, have been controlled to varying degrees. No case of plague has been reported in the country since 1967. Smallpox which was a dreadful disease, has been eradicated. The general death rate has come down from 27.4 per thousand in 1951 to an estimated 10.9 per thousand in 1988 and life expectancy at birth has increased from 32 in 1941-51 to over 58.6 in 1986-91. The infant mortality rate had come down from 146 in the 50s to 94 in 1988.

NATIONAL HEALTH PROGRAMMES

MALARIA

National Malaria Eradication Programme is the world's biggest health programme against a single communicable disease and continues to be the country's most comprehensive and multifaceted public health activity. With the succesful implementation of programme in 1958, the annual incidence of malaria was drastically reduced from 7.5 crore at the time of Independence to about one lakh in 1965. Deaths due to malaria were completely eliminated. Unfortunately, due to various factors these achievement could not be maintained. Resurgence of malaria necessitated renewed vigorous anti-malaria activities and the programme was modified in the context of escalating malaria incidence. The Modified Plan of Operation was implemented from 1 April, 1977. Since then, there has been a gradual downward trend in malaria cases and there were only 18.54 lakh incidents in 1988 and 20.18 lakh (provisional) in 1989.

FILARIA

National Filaria Control Programme has been in operation since 1955. It is estimated that 36.7 crore people are exposed to the risk of filariasis. One crore ninety lakh manifest the disease and 2.5 crore have the filaria parasites in their blood.

Activities under the programme at present are confined only to antilarval operations in urban areas where 204 filaria control units provide protection to four crore persons. Twenty seven survey units and 192 clinics are functioning. Besides, 12 headquarters bureaux are functioning at the state level. So far, only 243 out of 301 districts in the endemic states, have been surveyed. One hundred and seventy four districts have been found to be endemic for filariasis. Survey work is on in the remaining 58 districts.

Training in filariology is imparted at three Regional Filaria Training and Research Centres situated at Calicut, Rajahmundry and Varanasi under the National Institute of Communicable Deseases of Delhi.

KALA-AZAR

Kala-azar is endemic in Bihar and West Bengal. Directorate of National Malaria Eradication Programme (NMEP) monitors the kala-azar situation in the country. Its kala-azar unit regularly collects kala-azar incidence reports and keeps a close vigil over the situation. Kala-azar control activities are being implemented in Bihar and West Bengal under NMEP on 50:50 cost sharing basis.

LEPROSY

Leprosy is a major public health and social problem. All states/UTs report leprosy cases but the endemicity varies from state to state and district to district. There are about 40 lakh leprosy cases in the country. Of these, 15 to 20 per cent are infectious while an equal number of the cases have deformity. It is highly endemic (15 to 20 per cent) among the children. National Leprosy Control Programme has been in operation since 1955, but it received a high-priority only after 1980. The programme was redesignated as National Leprosy Eradication Programme in 1982-83 on the recommendations of an expert group committee. It is implemented as a Centrally-Sponsored Scheme. The programme is goal-specific and target-oriented with an ultimate aim to achieve eradication of disease by the year 2000. At the end of March 1990, 720 leprosy control units, 931 urban leprosy centres, 294 temporary hospitalisation wards, 244 district leprosy units, 6,100 SET centres, 49 leprosy training centres and 37 sample survey-cum-assessment units had been established in various states/union territories under the programme.

The treatment of leprosy cases with a number of drugs instead of one, has been found highly effective. Government has recognised the advantages of Multi-Drug Treatment (MDT) over traditional single drug therapy i.e., Dapsons monotherapy. 130 endemic districts (population-160 lakh) with 20 lakh leprosy cases have been brought under MDT.

At the end of July 1990, 25.2 lakh leprosy cases were on record and getting regular treatment. Forty nine leprosy training centres have been established to impart training under the programme. So far, over 6,500 medical officers and 20,500 para-medicals have been trained in leprosy control activities.

About 285 voluntary organisations are supplementing the governmental efforts in the fight against leprosy. All the voluntary organisations operate under the direction of National Leprosy Eradication Board. Over eight lakh leprosy cases are on the records of voluntary organisations.

A community-based comprehensive scheme has been drawn to rehabilitate leprosy-cured persons. It will be taken up in the first phase on a pilot basis in five endemic districts-one each in Karnataka, Tamil Nadu, Andhra Pradesh, Maharashtra and Orissa.

TUBERCULOSIS

Tubcerculosis is another major public health problem. About 1.5 per cent of the populaiton is estimated to be suffering from radiologically active tuberculosis of the lungs of which 0.4 per cent are sputum positive and infectious cases.

At present, district TB centres are functioning in 378 districts to undertake TB Control Programme in association with general health and medical institutions. In addition to it, 330 TB clinics are functioning mainly in urban areas. Primary health centres have also been involved actively in TB detection and treatment activities. In rural areas, multi-purpose health workers and village health guides are also being involved in motivation and health education activities under the programme. There are about 47,000 TB beds available in the country for treatment of serious and emergent TB patients. National Tuberculosis Institute, Bangalore, which was established in 1959, is engaged in training of medical and para-medical personnel and monitoring the National TB programme.

Essential activities under the programme have expanded considerably during the last five years. Targets have been laid for detection of new TB cases from 1982-83 and for sputum examinitaion of new chest sympatomatics at the primary health centres each year since 1983-84. During 1989, about 16.70 lakh new TB cases were detected against the target of 15 lakh. Duration of treatment for tuberculosis patients with conventional regimens is of 12 to 18 months and is believed to be one of the major causes for irregularity and premature stoppage of the treatment by the patients. With the advent of Rifampicin and Pyrazinamide, it has become possible to reduce the duration of treatment to six to eight months. Short course chemotherapy drug regimens containing Rifampicin and Pyrazinamide are being introduced in District TB programme under the National Tuberculosis Control Programme in a phased manner. So far, 212 districts have been brought under it.

SEXUALLY TRANSMITTED DISEASES

For the management and control of sexually transmitted diseases (STD) in the country, Government has laid emphasis mainly on teaching, training, research, epidemiology and health and community education in sexually transmitted diseases. The Government has established five regional STD Teaching-Cum-Training Centres, five regional STD Reference Laboratories and five regional Survey-Cum-Epidemiological Units at Calcutta, Delhi, Hyderabad, Madras and Nagpur to function on a zonal basis. In the regional STD Teaching-Cum-Training Centre, orientation courses are conducted for the in-service medical and para-medical personnel in the discipline of venereology and the trainees are paid stipends at the rate of Rs 800 and Rs 620 per month respectively.

Since the main target group of AIDS patients is the STD patients, the STD control programme has been further intensified during the Eighth Plan Period providing thereby: (a) establishment of new STD clinics and augmenting the existing ones: (b) providing free treatment to the STD patients by supplying essential drugs to the clinics, and (c) opening more Survey-Cum-Empidemiological Units in states. World Health Organisation and donor countries have been asked to assist in implementing Medium-Term Plan for Prevention and Control of AIDS in India.

BLINDNESS

National Programme for Control of Blindness was launched in 1975-76 which incorporates the earlier Trachoma Control Programme started in 1968. About 300 lakh persons are suffering from visual impairment. Over 120 lakh are blind, of them over 100 lakh can be cured by operation. The National programme aims at educating people on eye care, providing ophthalmic services to rural areas through mobile opthalmic units and establishing a permanent infrastructure for eye health services within the existing public health delivery system.

Eighty fully-equipped general mobile units are functioning in different parts of the country. Each unit carries out from 1,500 to 2,000 intra-ocular operations every year. One hundred and sixty district mobile units are functioning and in operation under the programme as extension units of district hospitals. The opthalmology departments of 60 medical colleges have been developed to become community opthalmic centres. Nine institutes of opthalmology have achieved the status of regional institutes. Apart from the mobile units, 404 hospitals have been upgraded to start an eye unit in each district. So far, 4,200 block level primary health centres have been provided with opthalmic equipment. The nine Regional Institutes of Opthalmology and Dr. Rajendra Prasad Centre for Ophthalmic Sciences, New Delhi, are being assisted for manpower development, research and referral services. Ninety six medical teaching institutions and eight voluntary organisations have been financially assisted in strengthening eye banks for registration of donors, collection and distribution of donor material for corneal transplantaion.

Eye antibiotic ointment tunes are being distributed to the states to control trachoma and associated infections. Government gives financial assistance up to Rs 12,000 per eye camp to voluntary agencies and *panchayat* bodies at the rate of Rs 60 per intra-ocular operation.

CANCER

Cancer is a disease which carries a high rate of mortality unless it is detected and treated early. In India, at any given time, it is estimated that there are 15 to 20 lakh cases and about five lakh new cases occur every year. The mortality rate is very high and almost three lakh cancer patients die every year. Cancer of oral cavity in both the sexes and of cervix in women are by far the most common malignancies. Breast cancer incidence is also very high. It has been estimated that about 36 per cent of the total caner cases are related to tobacco use. The data on cancer incidents in India is derived from six population-based and six hospital-based cancer registries set up by Indian Council of Medical Research (ICMR).

Surgery, radiotherapy and chemotherapy are the main modalities of treatment for cancer. Surgery is the most effective mode of treatment for cancer cases detected early. It is also estimated that about 60 per cent of the cancer cases in India require radiotherapy while 10 per cent cases need chemotherapy. Surgery facilities are available in all major hospitals. There are about 160 cobalt therapy units in 97 instituions including 10 regional cancer centres in the country. Chemotherapy can be made available at any major hospital in the country by trained physicians.

A highly sophisticated machine for caner treatment '4-6 MeV Linear Accelerator (LINAC)' has been developed and successfully installed at PGI, Chandigarh. With this, India joins hi-tech area in electronics for health care.

GOITRE

Endemic Goitre has been recognised as an age–old health problem in the Himalayan belt. With recent extensive studies, it is now established that about 17 crore people in the country are exposed to iodine deficiency disorders. In 25 states till date, the survey findings are available in respect of 208 districts of which 182 have been found to be endemic for iodine deficiency disorders. It is estimated that about 5.6 crore people are suffering from some of the manifestations of these disorders.

National Goitre Control Programme is being implemented on a priority basis. Government has decided to iodise the entire edible salt in the country in a phased manner by 1992. The production of iodised salt has registered a steep-rise during the last two years. A record production of 21.90 lakh MT was achieved in 1989-90 against 21.90 lakh MT during 1988-89. With a view to ensuring proper monitoring and effective implementation of the National Goitre Control Programme, states/union territories have been advised to establish a Goitre Cell. Presently, 18 states/union territories have established such cells.

JAPANESE ENCEPHALITIS

After the occurrence of Japanese Encephalitis (JE) epidemic in different states in 1977-78, Government reached an agreement with the Government of Japan for the manufacture of Japanese Encephalitis vaccines.

This vaccine is being manufactured at CRI, Kasauli, while its supervised administration is being undertaken in Assam, Andhra Pradesh, Uttar Pradesh and West Bengal. JE control activities are being implemented in problem states under NMEP.

MEDICAL RELIEF AND SUPPLIES

HOSPITALS AND DISPENSARIES

Medical services are primarily provided by the Central and state governments. Certain charitable voluntary and private institutions also provide medical relief. The district and sub-divisional hospitals are being further developed by removing deficiencies in referral services. The number of hospital beds (both government and private) was 6.02 lakh as on 1 January, 1990, as compared to 1.13 lakh in 1951-52. The bed-population ratio is now 0.73 per 1,000 population, which was 0.24 at the commencement of First Plan. The number of registered doctors and nurses at the end of 1987 was 3.32 lakh and 2.19 lakh respectively.

CENTRAL GOVERNMENT HEALTH SCHEME

The Central Government Health Scheme was introduced on 1st July, 1954, as the 'Contributory Health Scheme' in Delhi with a view to provide comprehensive medical care facilities to the Central Government Employees and the members of their families and to do away with the cumbersome and expensive system of reimbursement of medical expenses.

The scheme, which was started in the Capital with 16 Allopathic dispensaries covering 2.33 lakh beneficiaries has grown over the years, both in coverage and scope. It has been extended to Bombay, Calcutta, Patna, Madras, Hyderabad, Bangalore, Pune, Nagpur, Ahmedabad, Jaipur, Kanpur, Allahabad, Meerut and Lucknow. The peripheral towns of Gurgaon, Faridabad and Ghaziabad have also been covered under the CGHS Delhi. As on 1 November, 1990, there are 225 Allopathic dispensaries, 13 Poly-Clinics, 31 Ayurvedic dispensaries/units 33 Homeopathic dispensaries/units, three Unani dispensaries/units, 1 Siddhu unit and three Yoga centres in the cities where the scheme is in operation. During the current financial year in 1990-91, three allopathic dispensaries have been opened, two under CGHS Delhi and are under CGHS Hyderabad. The scheme presently covers 38.81 lakh beneficiaries which include Central Government Employees and other entitled persons. From 10 June, 1985, all the dispensaries have been working in a single shift with augmented evening services. However, some of the dispensaries are being run for continuous 12 hours on an experimental basis.

Besides the Central Government Employees, the other sectors of population now availing CGHS facilities include employees of certain autonomous organisations, Retired Central Government Servants, Widows of Central Government Employees in receipt of family pension, MPs and Ex-M.Ps, Ex-Governors, Ex-Vice-Presidents, Retired Judges of Supreme Court and High Courts, Freedom Fighters and members of the general public (in 14 specified areas in Delhi). The scheme has also been extended to the workers of the Employees State Insurance Corporations, Kanpur, Retired Employees of Indian Council of Agriculture Research (Non-optees in Delhi/New Delhi) and Employees of Kendriya Vidyalaya Sangathan stationed in Calcutta, Madras, Bombay, Bangalore, Hyderabad-Secundrabad, the employees of statutory canteens in the cities where the scheme is functioning (and if they are not covered under any other medical scheme) and the Retired Employees of N.I.H and F.W. New Delhi, Employees of Central Council of Indian Medicine, New Delhi. Since February, 1988, CGHS facilities have also been extended to such of the employees of C.G.H.S. as are not residing in the covered areas. The Press Representatives and the Employees of the Delhi High Court have also been extended CGHS facilities with effect from March, 1988, and November, 1988, respectively. CGHS facilities have also been extended to the family members of Central Government Employees who are transferred to Jammu and Kashmir.

The facilities under the scheme include out-patient care provided through a network of Allopathic Dispensaries as well as Ayurvedic/ Homoeopathic/Unani Dispensaries/Units, supply of medicines, laboratory and X-ray investigations, domiciliary visits, emergency treatment, ante-natal care, confinement and post-natal care, advice on family welfare, specialist consultation and hospitalisation facilities at Government hospitals as well as in private hospitals recognised under C.G.H.S. Since November, 1984, the Central Government pensioners have been made eligible for reimbursement of cost of hospitalisation/specialised treatment including cost of artificial appliances. In order to increase the number of service institutions as well as to offer better service to the CGHS beneficiaries, all Government Hospitals such as Army, Naval, Railway E.S.I. and State Government/Municipal Hospitals have been recognised under CGHS with effect from 8 May, 1986. The domiciliary restrictions to avail of the benefit of the scheme have been liberalised in favour of pensioners. Now, the Central Government Pensioners are able to avail of the CGHS facilities from their nearest dispensary irrespective of the fact as to whether they are residing within the jurisdiction of the scheme or not.

In order to expedite disposal of reimbursement of medical expenses claims, powers to reimburse the cost of artificial appliances have been delegated to the administrative Ministeries/Departments. The Deputy Directors of CGHS Organisations have been delegated powers to reimburse the cost of artificial appliances to the pensioners. The Deputy Directors have also been delegated powers to reimburse Aya-Charges.

The out-station pensioners have been allowed to obtain medicines from the approved chemists/ Super Bazars through authority slip issued by the concerned Deputy Directors for a period specified by the specialists at a time.

In September, 1989, the facilities of CGHS were extended to Freedom Fighters. About 1.50 lakh Freedom Fighters are likely to be benefitted by these services.

PRIMARY HEALTH CENTRES

Primary health care is being provided to rural population in the country through a network of 20,531 primary health centres, 1,30,390 sub-centres and over a thousand community health centres by 5.86 lakh trained *dais* and 4.10 lakh health guides besides a large number of rural dispensaries working under state governments/union territory administrations. It is proposed to expand these facilities further in a phased manner so as to have one primary health centre for every 30,000 population (20,000 in hilly and tribal areas), one sub-centre for every 5,000 population (3,000 population in hilly and tribal areas) by 31 March, 1990, and one community health centre for about every one lakh population by 2000 AD.

INDIAN MEDICINES PHARMACEUTICAL CORPORATION

Government has established a public sector undertaking viz., Indian Medicines Pharmaceutical Corporation Ltd., with the primary objective of producing quality Ayurvedic, Unani and Siddha Medicines. The factory and the registered office are situated at Mohan, Almora District. This is a joint venture.

Uttar Pradesh Government is participating in this project through the Kumaon Mandal Vikas Nigam, A Public Sector Undertaking. The corporation has started commercial production since 1983-84. A large number of medicines produced at the factory are being supplied primarily to CGHS and research councils.

PHARMACOPOEIAL LABORATORIES

Pharmacopoeial Laboratory of Indian Medicine and Homoeopathic Pharmacopoeial Laboratory, both in Ghaziabad, are subordinate offices of the Ministry of Health. The former is engaged in laying down the standards of single drugs and compound formulations of Ayurvedic, Unani and Siddha systems of medicine, while the latter established in 1975, functions as a standard-setting-cum-drug-testing laboratory at national level. This laboratory also works out various standards.

DRUGS

The Drugs and Cosmetics Act, 1940, as amended from time to time, regulates import, manufacture, sale and distribution of drugs and cosmetics in the country. Under the Act, import, manufacture and sale of substandard, spurious, adulterated or misbranded drugs are prohibited. Government is empowered to check the quality of imported drugs, coordinate the activities of the states, lay down regulatory measures and standards of drugs and grant approval for the import or manufacture of new drugs. The control over the quality of drugs which are manufactured, sold and distributed in the country, is exercised by state governments. Zonal offices of the Central Drugs Standards Control Organisation (CDSCO) at Bombay, Calcutta, Ghaziabad and Madras maintain close liaison with state organisations for enforcement of the provisions of this act. CDSCO arranges training programmes for personnel concerned with drugs standard control.

Central Drugs Laboratory, Calcutta, functions as the testing laboratory for imported drugs and analytical quality control of drugs manufactured within the country on behalf of the Centre and state drug control authorities. It is the appellate laboratory under the Drugs and Cosmetics Act to test samples of drugs sent to it by courts. Central Indian Pharmacopoeia Laboratory, Ghaziabad, tests samples of non-biological drugs included in the Indian Pharmacopoeia.

PRICES

Prices of bulk drug formulations have been under statutory control since 1962, but more effectively from 1970. The Drugs (Prices Control) Order, 1970, has now been replaced by the Drugs (Price Control) Order, 1979. As a result of these measures, the wholesale price index of drugs and medicines has been kept steady vis-a-vis other commodities.

VACCINE PRODUCTION

India is self-sufficient in the production of all vaccines including measles required for immunization programme except polio. The polio vaccine is imported in bulk in a concentrated form. It is diluted and ampouled at the

Haffkine Bio-Pharmaceutical Corporation Ltd., Bombay. The indigenous production of polio vaccine is also to start soon.

OBJECTIONABLE ADVERTISEMENT

The Drugs and Magic Remedies (Objectionable Advertisement) Act, 1955, prohibits the publication of objectionable advertisements relating to sexual stimulants, alleged magic cures for venereal disease and diseases peculiar to women. The act, as amended in 1963, also prohibits import and export of objectionable advertisements and authorises the customs and postal authorities to intercept articles suspected to contain such advertisements.

MEDICAL STORES ORGANISATION

Medical Stores Organisation (MSO) with seven units at Bombay, Calcutta, Guwahati, Hyderabad, Madras, Karnal and Delhi, is responsible for procurement and supply of quality medical stores including equipment to about 1,800 regular indentors over the country at most economical rates. MSO has three chemical laboratories attached to the Medical Stores/Depots at Bombay, Calcutta and Madras. Most of its clients are small hospitals and dispensaries in rural or sub-urban areas. Apart from general supplies, it receives supplies from international agencies like UNICEF, SIDA, WHO, USAID, etc., and distributes them all over the country. Various drugs and other commodities required for running the national health programmes like Leprosy Eradication Programme, TB Control Programme, Malaria Eradication Programme and Family Welfare Programme are handled by this organisation. It arranges relief supplies to victims of natural and national calamities like droughts, floods, cyclones, wars, agitations, etc., MSO has also taken over the responsibility of making supplies of medical stores to CGHS throughout the country. Besides, it arranges gift supplies to foreign countries at the instance of the Ministry of External Affairs.

At its Bombay and Madras factories, a large number of formulations such as tinctures, bandages, syrups, tablets and ointments, are manufactured to meet the requirement of indenting units.

FOOD ADULTERATION

The Prevention of Food Adulteration Act, 1954, has been in force since 1 June, 1955, with the objective of ensuring that food articles sold to consumers are pure and wholesome. It also aims at preventing fraud or deception and encouraging fair trade practices. A minimum imprisonment of six months with a minimum fine of Rs 1,000 is envisaged under the act for cases of proven adulteration whereas for the cases of adulteration which may render the food injurious to cause death or such harm which may amount to grievous hurt, the punishment may go up to life imprisonment and a fine which shall not be less than Rs 5,000.

The administration of the act and the provisions thereunder is the primary responsibility of state governments and union territory administrations. The Central Government lays down broad policies in this regard, carries out the necessary amendments to the act and rules and advises state governments and union territory administration in the effective implementation of the programme. For advising the Centre or the state governments with regard to implementation of the act, there is a statutory body, namely, Central Committee for Food Standards. The committee is assisted by various technical sub-committees. The Act is, by and large, implemented by local bodies. States have been advised to establish separate food-cells.

There are four Central Food Laboratories *viz.,* Central Food Laboratory at Central Food Technological Research Institute (CFTRI), Mysore; Central Food Laboratory at Food Research and Standardisation Laboratory, Ghaziabad; Central Food Laboratory at State Public Health Laboratory, Pune and Central Food Laboratory, Calcutta. Samples are sent to these appellate laboratories by courts. Statements of facts contained in the report given by the laboratories are considered to be final and conclusive evidence.

There are 76 food laboratories under the control of state governments/ local bodies. The samples lifted by food inspectors are sent to these laboratories, and, on the basis of the reports, prosecutions are launched in courts.

Under joint FAO/WHO Food Standards Programme, Codex Alimentarius Commission has been established to formulate world-wide standards for food. India is also a member of this body. A National Codex Committee has been set up under the Ministry of Health and Family Welfare to formulate the Indian viewpoint on various matters concerning international food standards programme,.

Training being an important component of the programme for prevention of food adulteration, the Directorate General of Health Services organises in -service training programmes for different functionaries responsible for its implementation. It also organises training in collaboration with various institutes in the country. Fellowships are provided by WHO for training analysts in sophisticated methods of analysis.

NUTRITION

The major nutritional problems in India are Protein Energy Malnutrition, Vitamin A deficiency and Anaemia. Goitre is widely prevalent while Flourosis and Lathyrism are localised to certain regions. State Nutrition Divisions set up in Health Directorates of 17 states and two union territories to assess the diet and nutritional status in various groups of population, conduct nutrition education campaigns, supervise supplementary feeding programmes and other nutritional ameliorative measures. Surveys conducted by State Nutrition Divisions and National Nutrition Monitoring Bureau under ICMR have revealed that the Protein Energy Malnutrition and other deficiency disorders are prevalent in the large section of the population, the most affected being the young children, pregnant and lactating mothers.

To combat the problem, various nutrition programmes are being implemented by the Government. The Integrated Child Development Service Scheme (ICDS) provides a package of services which includes supplementary feeding, nutrition and health education, referral services, immunization, health check-up and non-formal education, treatment of minor ailments and assimilation of other supportive services like water supply, sanitation, etc. As on March, 1990, the number of sanctioned ICDS projects are 2424 including 188 in the state sector. Special Nutrition Programme and Balwadi Nutrition Programme also providing supplementary nutrition, is being gradually merged with ICDS. The Mid-day Meal Programme is meant for primary school children.

To prevent blindness among children due to Vitamin A deficieny, concentrated dose of Vitamin A is given orally every six months through peripheral health workers. Similarly, to prevent Nutritional Anaemia among women and children, combined tablets of iron and folic acid are distributed through health centres. To promote breast-feeding as means towards better nutrition, Government is formulating the National Code for Protection and Promotion of Breast-Feeding which envisages banning advertisement and promotion of commercial infant foods. A Nutrition Policy is also being drafted.

National Institute of Nutrition, Hyderabad and All India Institute of Hygiene and Public Health, Calcutta, are the principal organisations for nutrition research and training of nutrition workers.

MEDICAL EDUCATION AND RESEARCH

Indian Medical Council functions as a guardian for the maintenance of standards in medical education. To promote medical education, 128 medical colleges were functioning in 1988-89 as against 30 in 1950-51. Forty three dental colleges are functioning in the country with admission capacity of 1,664 students in BDS course. Establishment of new medical colleges and expansion of existing ones had raised the admission capacity from 2,500 in 1950-51 to over 13,062 in 1988-89. Government also proposes to launch a Continuing Medical Education Programme (CME), for which National Academy of Medical Sciences has been designated as the central coordinating agency.

MEDICAL RESEARCH

The Indian Council of Medical Research (ICMR) is the apex body in India for the formulation, coordination and promotion of biomedical research. The primary functions of the council are discharged through its permanent research institutes/centres (20 at present), regional medical research centres, centres for advanced research, research units, task force projects and national Multicentric Collaborative Projects in different parts of the country. In addition, there are adhoc schemes and fellowships generated by active scientists in biomedical institutions/universities in different parts of the country. ICMR also attempts to strenghthen indigenous capabilities, promote a broad-based and balanced cadre of research personnel in the country and develop facilities to tackle the present and future health problems.

HEALTH PRIORITIES

The Indian Council of Medical Research's priorities coincide with the national health priorities such as control and management of communicable diseases, fertility control, maternal and child health, control of nutritional disorders, developing alternative strategies for health-care delivery; containment within safety limits of environmental (and occupational) health problems; research on major non-communicable diseases like cancer, cardiovascular diseases, blindness, diabetes and other metabolic and hematological disorders, mental health research and drug research (including traditional medicine). All these efforts are undertaken with a view to reducing the total burden of diseases and to promote health and well-being of the people.

Research in traditional systems of medicine has adopted a disease oriented approach. Biomedical informatics has been identified as an important thrust area and efforts have been intensified to bridge the existing gaps between researchers, health planners, policy makers, providers and users of health services. Apart from the print media, the audio-visual media is being used more and more for dissemination of biomedical information.

NURSING EDUCATION

Primarily nursing personnel are trained at four levels: (i) Auxiliary Nurse Midwife (ANM)-There are 411 ANM schools attached to district hospitals and primary health centres. Many are run by private/missionary organisations. Admission requirement for this training is matriculation and period of training is one and half year. Nearly 20,345 ANMs are under training in these schools. These ANMs, after successfully completing the course, are registered as Auxiliary Nurse Midwives with various nursing councils and are employed as female health workers at the sub-centre level. They, after five years of field experience, are sent for higher training of Health Supervisors. Forty four such schools are available in the country; (ii) General Nursing and Midwifery-There are 390 schools of Nursing Midwifery imparting Diploma in General Nursing and Midwifery. Nearly 8,000 nurse midwives qualify from these schools. After registration as nurse midwives, they are appointed as staff nurses in hospitals, health centres, etc. The admission requirement for the course is senior secondary and duration of the course is three years. After this diploma, the nurses can obtain B.Sc.

Degree in Nursing in two years which is called Post Basic B.Sc. Ten such programmes exist in several universities/medical colleges in Punjab, New Delhi, Madras, Bangalore, Calcutta. All India Institute of Medical Sciences, etc. Besides these states and places, Assam too is planning such programmes for updating knowledge and skills of practising nurses; (iii) B.Sc. Nursing-There are 19 colleges of nursing which admit candidates with senior secondary (minimum 50 per cent marks) for B.Sc. Nursing Course of four years duration. After qualifying these, nurses can work in hospitals, community and speciality areas of hospitals and specialised community programmes like School Health, Occupational Health, Nursing, etc. Nearly 450 nurses obtain Degree in nursing every year. New colleges have come up in Karnataka and Tamil Nadu which are yet to be recognised, and (iv) Masters degree in Nursing-Eight colleges in the country offer Masters Degree in Nursing for B.Sc/Post Basic Nurses. About 50 nurses obtain this degree. Many of them are holding senior teaching and administrative positions.

INDIAN NURSING COUNCIL

Indian Nursing Council which was set up in 1947, lays down the minimum standards of nursing education. It prescribes syllabi for different training programmes, inspects schools of nursing and maintains statistics of nursing manpower. The act governing the council is under amendment for making provision of latest trends in health legislation and role of Indian Nursing Council. Several short-term courses have been developed by the council.

NURSING SERVICES

Several steps have been taken to improve the status of nursing and nursing profession. A high power committee was set up to review all aspects of nursing profession i.e., nursing education, nursing services and nursing manpower. Efforts have also been made to revise the pay scales and allowances for nursing personnel. Nurses also enjoy all benefits of pension, bonus, GPF, etc., like other Government Employees.

HEALTH EDUCATION

Central Health Education Bureau (CHEB) is an apex organisation in health education in the Directorate General of Health Services. The organisation was set up in 1956 to coordinate and promote health education through various divisions. Its activities include interpreting plans and programmes of Government, training of health and community welfare workers in health education, preparing and distributing health education material to be adopted by states and other agencies, carrying out research in behaviour changes of the community in relation to health practices, evolving effective methodology for training, rendering technical assistance to official and non-official agencies in the field of health education, developing health education syllabi for different age groups of school children and teacher training courses and cooperating and collaborating with international agencies in promoting health education.

The bureau deals with the development of health education bureaux in states and union territories. So far, 25 states and six union territories have set up health education bureaux besides one hundred and forty two district health education units. The bureau keeps close liaison with all health education units in addition to providing technical guidance. It now publishes four journals, namely, *Swasth Hind* (english monthly), *Arogya Sandesh* (hindi monthly), *DGHS Chronicle* (english quarterly) and *Swasthya Shiksha Samachar* (Hindi quarterly).

The Central Health Education Bureau brings out printed publicity material for various national health programmes, besides prototype health education material to be adopted by states in regional languages according to their needs. It also provides communication and media support to various national health programmes and maintains liaison with AIR and Doordarshan for broadcasting and telecasting such programmes. It organises exhibitions and helps in production of films, radio and television spots on health.

Research and Evaluation Division of CHEB is engaged in carrying out research in relation to acceptance of health practices. The division has so far completed 75 research studies on Malaria, Smallpox, STD, Leprosy, nutrition, water supply, expanded programme on immunization and training programme. Besides, four other research studies are in progress. It has brought out nine technical paper/reports. It also trains health professionals in research methodology. Seven such training courses have been conducted.

The bureau conducts a Post-Graduate Diploma in Health Education affiliated to the University of Delhi and recognised by the Medical Council of India. It also conducts two courses of two months duration leading to Certificate in Health Education and nine other in-service courses for medical and para-medical personnel.

School Health Education Divison of CHEB monitors a Centrally Sponsored National School Health Service Scheme since April 1977. Its objective is to provide school health serivces to students of primary classes in rural areas through the network of primary health centres. It is also working with NCERT, Board of Secondary Education and University Grants Commission to integrate health education in school and university curricula.

FAMILY WELFARE

One of the most crucial problems facing the Nation today is the burgeoning population which has been growing at an alarming rate. By 1981, India's population had doubled itself since 1947 and is projected to touch 8,370 lakh in 1991. It is increasing by about 170 lakh every year. Such a rapid increase in population has very serious repurcussions on the socio-economic development. Varying social customs and beliefs favour large family which impede the process of change and willing adoption of modern methods of contraception. A universal desire to have atleast one or two male children and the 'mean age' of marriage of women at 18.3 years also become contributory factors to large families. Inspite of this, India is committed to attaining the twin goals of 'Health For All' and 'Net Reproduction Rate of Unity' by the year 2000.

In keeping with democratic traditions of the country, Family Welfare Programme seeks to promote on a voluntary basis, responsible and planned parenthood with two child norm, male and female, or both, through independent choice of family welfare methods best suited to the acceptors. Family Welfare services are offered through total health-care delivery system. People's participation is sought through all institutions, voluntary agencies, opinion leaders, people's representatives, government functionaries and various other structures and influential groups. Imaginative use of mass media and interpersonal communication is resorted to for explaining various methods of contraception and removing socio-cultural barriers.

As a result, the number of acceptors of various methods has started to increase over the years.

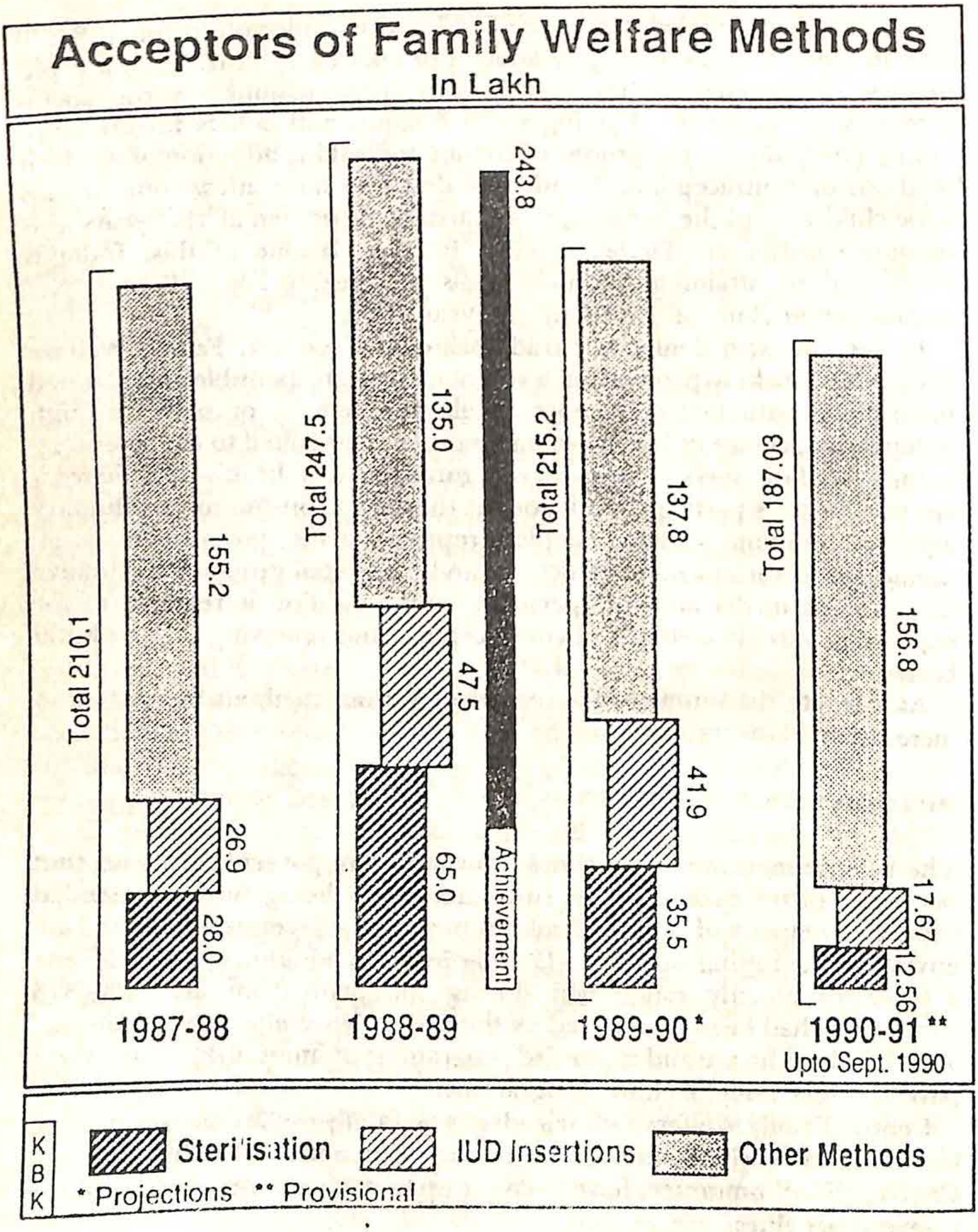
IMPLEMENTATION MACHINERY

The programmes are implemented through state governments with cent percent Central Assistance. In rural areas, it is being further extended through a network of primary health centres and sub-centres. Seventh Plan envisaged the setting-up of 54,612 sub-centres in addition to about 36,881 sub-centres already established during the Sixth Plan and 1,30,515 sub-centres had been established by the end of November 1990. Maternal and child health-care and expanded programme of immunization are also a part of the Family Welfare Programme.

Central Family Welfare Council advises on family welfare programmes at the national level. A number of Central Committes like the Research Coordination Committee, have been set up to study the progress of all the research activities.

BIRTH CONTROL METHODS

During the current financial year 1990-91, (upto September, 1990), 12.56 lakh sterilisations were performed in the country. The number of IUD insertions during the same period was 17.67 lakh. The total number of acceptors of different methods was 156.80 lakh. The all-time record was set during the previous year, 1989-90, when total number of acceptors reached 258.1 lakh (provisional).


Acceptors of Family Welfare Methods
In Lakh
Total 210.1
155.2
26.9
28.0
1987-88
Total 247.5
135.0
47.5
65.0
243.8
Achievement
1988-89
Total 215.2
137.8
41.9
35.5
1989-90 *
Total 187.03
156.8
17.67
12.56
1990-91 **
Upto Sept. 1990
Sterilisation
IUD Insertions
Other Methods
* Projections ** Provisional
KBK

Nirodh, besides being provided free, is also sold under the social marketing programme which is being operated through a network of over three lakh retail outlets of nine leading consumer goods, pharmaceutical and oil companies. Under this scheme, Jelly Cream Tubes are also distributed.

Oral pill programme under free distribution scheme was extended to all urban centres, including those run by local bodies and voluntary organisations. Besides this, social marketing of oral pill under the brand name 'Mala-D', has been undertaken with the help of four pharmaceutical companies on zonal basis. India's first innovative spermicidal condoms *New Share* and *Rakshak* have already been introduced in the market.

IMPACT OF THE PROGRAMME

It is estimated that 42.7 percent of 14.20 crore eligible couples whose wives are in the reproductive age-group of 15-44 years were protected by one or another approved family planning method as on 31 March, 1990, averting 11.78 crore births since inception of the programme.

MEDICAL TERMINATION OF PREGNANCY

The programme of medical termination of pregnancy, which is being promoted as a health measure, also provides for legalised abortion in cases when pregnancy occurs as a result of contraceptive failures. To avoid the recurrence of an unwanted pregnancy, a good proportion of the acceptors of abortion go in for some form of contraception like sterilisation, IUD, etc. The Medical Termination of Pregnancy Act, 1971, is in operation since April, 1972. A colour test 'Pregelisa' (Pregnancy Test Kit) has been developed. The kit is under rigorous testing procedures and, if found suitable, will be marketed throughout the country including rural areas.

MATERNAL AND CHILD HEALTH CARE PROGRAMME

The safe motherhood and child survival programme plays the most important part in family welfare programmes. The programme ensures effective ante-natal care, safe and asceptic delivery, care of mother and infants for immunisation, control of diarrhoeal diseases and acute respiratory infections, nutrition education and provision of basic medical care.

The integrated programme of mother and child health aims at the welfare of both, mother and child. It has also been extended to homes providing special care to pregnant mothers and children requiring immunization. A network of cold chain has been set up from the manufacturing units to state, regional, district and primary health care for storage of vaccines at optimum conditions. The Dais training programmes are being carried-out to provide skill and knowledge for safe delivery. A sum of Rs 68.30 crore had been provided during 1990-91 for supply of vaccines and MCH drugs against common communicable diseases and preventing Nutritional Anaemia and deficiency of Vitamin'A' in pregnant mothers and infants. Rs Nine crore was also provided for the programme of Oral Rehydration Therapy to control death due to Diarrhoeal Diseases among children.

TRAINING OF MULTI-PURPOSE WORKERS

The question of more effective coverage of population and better coordination was considered by the Executive Committee of Central Family Planning Council in 1972. This led to the formation of a package of health and family welfare services at the peripheral level by multi-purpose health workers. Under this scheme, the state level health administrators were trained at the National Institute of Health and Family Welfare in the concept and philosophy of the multi-purpose workers' scheme. District-Level medical officers and key trainers of health and family welfare training centres were trained at Central Training Institutes.

At present, Family Welfare Training and Research Centre, Bombay; Central Health Education Bureau, New Delhi; National Institute of Health and Family Welfare, New Delhi and Gandhigram Institute of Rural Health and Family Welfare Trust are imparting this training. The training of staff working at primary health centres i.e. medical officers, health supervisors and block extension educators, takes place at 47 health and family welfare training centres (H&FWTC) all over the country.

SPECIAL SCHEMES

Four schemes, namely, All India Hospitals Post-Partum Programme at district and sub-district level hospitals and PAP Smear-Test Facilities in medical colleges selected for this purpose, revamping of organisational set-up in urban slums of the country; sterilisation beds scheme and renovation of IUD room at rural family welfare centres attached to primary health centres, are being implemented as special schemes.

The Post-Partum Programme is a maternity-centred-hospital-based approach to family welfare programme and, now, covers 554 medical institutions at national, state and district level and 1,075 at sub-divisional level. All the 105 medical colleges have PAP Smear-Testing Facilities for early detection of Cervical Cancer among acceptors of family welfare methods. The sub-divisional hospitals have been taken up for extension of Post-Partum Programme with a view to providing the maternal and child health care services in rural and semi-urban areas so as to bring an overall improvement in the health status of the mothers and infants. A target of 1,200 sub-divisional hospitals to be brought under the purview of the programme, had been set for the Seventh Plan Period, but due to financial constraints only 1,075 Postpartum Centres could be approved by Government of India so far. It is proposed to cover 825 sub-district level centre during the Eighth plan period, subject to approval of the Planning

Commission. So far, 968 centres at this level have been sanctioned by the State Governments.

Urban revamping scheme has been introduced with a view to providing improved service delivery out-reach system of primary health care, family welfare and maternity services in urban areas. No new urban family welfare centres are to be set up but existing urban forces are to be reorganised and new health posts established as per the recommendations of the working groups. So far, 1,198 health posts and 14 City Family Welfare Bureaux have been reorganised. This includes 139 Health posts in Bombay and 123 in Madras under the World Bank Assistance for IPP V Project. State Governments have sanctioned operationalisation in 879 health posts and ten City Family Welfare Bureaux.

Sterilisation beds scheme provides immediate facilities for tubectomy operations in the hospitals where such cases cases could not be admitted due to lack of facilities. Under the scheme, beds are sanctioned to those medical institutions/hospitals which are run by voluntary organisations on the basis of their performance during the previous year. Beds are sanctioned to the voluntary institutions on the recommendation of the State Government and Regional Directors of Health and Family Welfare of the respective states. Maintenance grant of Rs 3000 per bed per annum is paid to each institution subject to the condition that a minimum of 60 tubectomies per bed per annum are performed. 3,611 sterilisation beds had been approved under State Government institutions, local bodies and voluntary organisations as on 31 March, 1989.

The Government has evolved a scheme for renovation/remodelling IUD Rooms into an operation theatre at the rural family welfare centres attached to primary health centres for providing improved facilities for sterilisation and MTP services to the population in rural areas. In all, 1,617 primary health centres were approved so far by the Central Government and another 1,356 sanctioned by states.

MOTIVATION AND EDUCATION

Family Welfare Programme in India depends on its voluntary acceptance by the people. To approach about 14.20 crore couples in the reproductive age group, living in urban and remote rural areas, a broad- based mass education and motivation programme has been launched. The multi-media campaign is being implemented by media units of the Ministry of Information and Broadcasting, state mass education media set-ups and other publicity agencies/organisations. The Ministry of Health and Family Welfare lays down the communication strategy, develops plans and coordinates the media and extension activities of various participating media agencies. The Mass Mailing Unit of the Department of Family Welfare disseminates information in the form of printed material to various categories of opinion leaders through direct mail service. Out of the list of addresses, five lakh are currently operational. In addition to this, the unit publishes two regular monthly journals-Centre Calling in English and Hamara Ghar in Hindi.

AREA PROJECTS

The Area Project Scheme under the National Family Welfare Programme started in 1973 when a few selected districts of Uttar Pradesh and Karnataka were taken up for intensive development of Health and Family Welfare Services Delivery Systems with the assistance from the External Funding Agencies. The objective of the project was to make available integrated services for Health and Family Welfare to the people and to reduce maternal and child mortality and morbidity. During the subsequent Plan Periods, the Area Projects were extended to cover more districts in other needy states also. All these Projects aimed to increase the demand for contraceptive services, to improve the availability of trained manpower in the field, to provide institutional buildings for the health services centres and the residences for the staff and also to improve the monitoring and evaluation of the programmes and activities.

So far, these projects have been taken up in 112 districts of 16 states. The training projects which have been approved recently under the scheme like India Population Project VI and India Population Project VII, however, cover the entire states. The main donor agencies currently assisting the area projects are World Bank, UNFPA, O.D.A. (U.K) and Danida. Efforts are being made to extend the Area Projects Scheme to more districts and states.

RESEARCH AND EVALUATION

Research activities continued in the field of demography and also communication action through 18 population research centres in various states. Bio-Medical Research in the field of Reproductive Biology and Fertility Control is being done in Indian Council of Medical Research, Central Drug Research Institute, All India Institute of Medical Sciences and National Institute of Health and Family Welfare.

10 Welfare

OUR Constitution enjoins upon the states to ensure justice and equlity of status and of opportunity to every citezen. Article 17 of the Constitution abolished untouchability and forbids its practices in any form. Article 38, which forms part of the Directive Principles of State Policy, mentions that "the state shall strive to promote the welfare of the people by securing and protecting, as effectively as it may, a social order in which justice, social, economic and political, shall inform all the institutions of the national life," Article 46 of the Constitution requires that the stats shall promote with special care the educational and economic interests of the weaker sections of the people in general and the Scheduled Castes and the Scheduled Tribes in particular. The rights of the Minorities are also specifically mentioned in the Constitution particularly in part III which enshrines the Fundamental Rights.

Hitherto, Welfare of the weaker sections was entrusted to a number of ministries/departments. With a view to providing an integrated thrust to the development of these sections of the population, a new Ministry of Welfare was constituted on the 25th September, 1985, by integrating subjects concerning; (i) Welfare of the Scheduled Castes, Scheduled Tribe and Religious and Socially and Economically Backward Classes/Other Backward Classes religious and linguistic minorities, earlier dealt within the Ministry of Home Affairs; (ii) the work relating to the welfare of the disabled (blind, deaf, dumb, orthopaedically and mentally handicapped) and programmes of Social Defence, connected with the victims of alcoholism, drug addiction, juvenile maladjustments, welfare of aged dealt with earlier by the erstwhile Ministry of Social and Women's Welfare and (iii) matters relating to the administration of Wakf, earlier dealt with the by Ministry of law. With effect from 26 April, 1990, the Department of Women and Child Development was shifted to the Ministry of Welfare, which was as a consequence reorganised into; (i) the Department of Welfare and (ii) the Department of Women and Child Development. The work of the Department of Welfare is transacted under six major areas.

ADMINISTRATIVE SET-UP

Responsibility for implementation of welfare schemes is being shared between Centre and State Governments. Centre is responsible for formulating welfare policies and programmes besides coordinating, guiding and promoting implementation of welfare services by states.

Activities of the Ministry of Welfare are carried out through five bureaux viz., handicapped welfare, social defence, minorites, tribal development and Scheduled Castes and Backward Classes. The year 1990-91 is the year of social justice and the Government of India is observing the tri-centenary of Bharat Ratna Late Dr. B.R. Ambedkar during the period 14 April, 1990 to 14 April, 1991 and programmes connected with this are entrusted to a separate centenary cell, which began functioning for to years from 14 April, 1990.

WELFARE OF SCHEDULED CASTES AND SCHEDULED TRIBES

Scheduled Castes and Scheduled Tribes have been specified by Presidential Orders issued under the provisions of Articles 341 and 342 of the Constitution. According to the 1981 Census, Scheduled Castes numbered 10.48 crores and Scheduled Tribes 5.38 crore. While the Constitution has prescribed certain protective masures and safeguards for these classes, successive Five-Year Plans have regarded their progress as a major objective of national policy.

CONSTITUTIONAL SAFEGUARDS

The Constitution prescribed protections and safeguards for Scheduled Castes, Scheduled Tribes and other Weaker Sections either specially or by way of insisting on their general rights as citizens with the object of promoting their educational and economic interests and removing social disabilities they are subjected to.

Main safeguards are:

(i) Abolition of untouchability and forbidding of its practice in any form (Article 17);

(ii) promotion of their education and economic interests and their protection from social injustice and all forms of exploitation (Article 46);

(iii) throwing open by law of Hindu religious institutions of public character to all classes and section of Hindus (Article 25b);

(iv) removal of any disability, liability, restriction or condition with regard to access to shops, public restaurants, hotels and places of public entertainment or use of wells, tanks, bathing ghats, roads and places of public resort maintained wholly or partially out of state funds or dedicated to the use of general public (Article 15 (2));

(v) curtailment by law in the interest of any Scheduled Tribes of general rights of all citizens to move freely, settle in and acquire property (Article 19 (5));

(vi) forbidding or any denial of admission to educational institutions maintained by the State or receiving grant out of state funds (Article 29 (2));

(vii) permitting the state to make reservation for backward classes in public services in case of inadequate representations and requiring the state to consider claims of the Scheduled Castes and Scheduled Tribes in the making of appointments to public services (Articles 16 and 335);

(viii) special representation in the Lok Sabha and State Legislative Assemblies to Scheduled Castes and Tribes till 25 January, 2000 (Article 330,332 and 334);

(ix) setting-up of Tribal Advisory Councils and separate departments in states and appointment of a special officer at the Centre to promote their welfare and safeguard their interests (Article 164 and 338 and Fifth Schedule);

(x) special provision for administration and control of Scheduled and Tribal Areas (Article 244 and Fifth and Sixth Schedule) and

(xi) prohibition of traffic in human-beings and forced labour (Article 23)

LEGISLATION AGAINST UNTOUCHABILITY

For enlarging the scope and making the penal provisions more stringent, the Untouchability (offences) Act, 1955, had been comprehensively amended by the Untouchability (Offences) Amendment and Miscellaneous Provision Act, 1976, which came into force from 19 November, 1976. With this amendment, name of the Principal Act has been renamed as Protection of Civil Rights act, 1955. The act provides for penalties for preventing any person on the grounds of untouchability, from enjoying the rights accruing on account of abolition of untouchability. Enhanced penalities/ punishments have been provided for subsequent offences.

Under the provision of Section Eight of the Representation of Peoples Act, 1951, a person who is convicted of an offence undet the act is disqualified from contesting elections to Parliament and State Legislatures for a period of six years commencing from the date of such conviction.

The PCR Act, 1955, is administerd by the State Governments. Under the provision of Section 15 A (4) of the act, the Government also places every year, before each House of Parliament, an annual report on the working of the provisions of Section 15 A of the act.

In pursuance of the provisions made under Section 15 A (2) of the Protection of Civil Rights Act, 1955, Central assistance is given to state governments and union territory administrations. Provisions for legal aid to scheduled caste victims of the PCR Act cases have been made by 20 states. Special cells/squads have been created by 19 states for initiating and excercising supervision over prosecution for entravention of the provisions of the PCR Act. Eighteen states have set up committees at various levels to make periodical review of the problems of untouchability and cases related to it and also suggest various measures for effective implementation of the PCR Act. Fifty three Special Courts/Special Mobile Courts have been set up in untouchability/atrocity prone districts of Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Orissa, Rajasthan and Tamil Nadu for expeditious disposal of such cases. Necessary guidelines and instructions are issued to states from time to time for effective implementation of the provisions of the PCR Act. Matching Central assistance is provided to the states for implementation of PCR Act. Liberation of scavengers by conversion of existing dry latrines has also been taken up under it. One hundred and sixteen town in 16 states have so far been assisted under the scheme 'whole town approach' in selected towns with the conditions for providing alternative employment to liberated scavengers.

MEASURES TO CHECK ATROCITIES AGAINST SC/ST

With a view to effectively deal with crimes against Scheduled Castes and Scheduled Tribes and to tone-up administrative machinery to tackle this vital issue, comprehensive guidelines containing precautionary, preventive, punitive and rehabilitative measures exist which states/UTs have to follow. Still these communities continue to be vulnerable and atrocities are committed against them in one form or other. In order that Scheduled Castes and Scheduled Tribes are fully protected from atrocities, Government enacted the Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, 1989. The act came into force from 30th January, 1990. It specifies the offences which are considered as atrocities and provides for deterrent punishments for commission of the same. The act also envisages preventive measures and states have to evolve schemes, among other things, for economic and social rehabilitation of such victims.

MACHINERY FOR SAFEGUARDS OF SC AND ST

By virtue of the Constitution (Sixty-fifth Amendment) Act, 1990, the 'Special Officer' post under Article 338 of the Constitution has been substituted by the National Commission for Scheduled Castes and Scheduled Tribes. The commission shall consist of a Chairperson, Vice-Chairperson and five other members to be appointed by the President under his hand and seal. The commission shall have the power to regulate its own procedure.

It shall be the duty of the commission:-

(a) to investigate and monitor all matters relating to the safeguards provided for the Scheduled Castes and Scheduled Tribes under this Constitution or under any other law for the time being in force or under any order of the Government and to evaluate the working of such safeguards;

(b) to enquire into specific complaints with respect to the deprivation of rights and safeguards of the Scheduled Castes and Tribes;

(c) to participate and advise on the planning process of socio-economic development of the Scheduled Castes and Scheduled Tribes and to evaluate the progress of their development under the Union and any state;

(d) to present to the President annually and at such other times as the commission may deem fit, reports upon the working of these safeguards;

(e) to make in such reports recommendations as to the measures that should be taken by the Union or any state for the effective implementation of those safeguards and other measures for the protection, welfare and socio-economic development of the Scheduled Caste and Scheduled Tribes; and

(f) to discharge such other functions in relation to the protection, welfare and development and advancement of the Scheduled Castes and Scheduled Tribes as the President may, subject to the provisions of any law made by Parliament, by rule specify.

The President shall cause all such reports to be laid before each House of Parliament alongwith a memorandum explaining the action taken or proposed to be taken on the recommendations relating to the Union and the reasons for the non-acceptance, if any, of any of such recommendations.

Where any such report or any part there of, relates to any matter with which any state government is concerned, a copy of such report shall be forwarded to the Governor of the State who shall cause it to be laid before the Legislature of the State alongwith a memorandum explaining the action taken or proposed to be taken on the recommendations relating to the state and the reasons for the non-acceptance, if any, of any of such recommendations.

The commission shall while investigating and monitoring any matter relating to the safeguards provided for Scheduled Castes and Scheduled Tribes under the Constitution or any other law for the time-being in force or under any order of the Government and to evaluate the working of such safeguards and to enquire into specific complaints with respect to the deprivation of rights and safeguards of the Scheduled Castes and Scheduled Tribes, have all the powers of a Civil Court trying a suit and in particular in respect of the following matters, naemly:-

(a) Summoning and enforcing attendance of any person from any part of India and examining him on oath;

(b) requiring the discovery and production of any document;

(c) receiving evidence on affidavits;

(d) requisitioning any public record or copy thereof from any court or office;

(e) issuing commissions for the examination of witnesses and documents;

(f) any other matter which the President may, by rule, determine.

The Union and every state government shall consult the commission on all major policy matters affecting Scheduled Castes and Scheduled Tribes.

REPRESENTATION IN LEGISLATURES

Under Articles 330 and 332 of the Constitution, seats are reserved for Scheduled Castes and Scheduled Tribes in the Lok Sabha and state Legislatures in proportion to their population. This concession initially was for a period of ten years from the commencement of the Constitution formation period. Subsequently, this was extended through amendments upto 25 January, 1990. Now the Parliament has passed the Constitution (Sixty Second Amendment) Bill, 1989, extending the period of reservation of seats for SC/ST and representation of Anglo-Indians by nomination to selected bodies for another ten years beyond 26 January, 1990. There is no reservation of seats in the Rajya Sabha and State Legislative Councils.

WELFARE AND ADVISORY AGENCIES

The Ministry of Welfare is the nodal agency for overall policy, planning and coordination of programmes of development of Scheduled Castes and Scheduled Tribes. Each Central Ministry and Department is the nodal agency concerning its sector. The Ministry of Welfare maintains liaison with the Central Ministries and State Governments.

PARLIAMENTARY COMMITTEE

The Government had set up Three Parliamentary Committees, first in 1966, second in 1971 and the third in 1973 to examine the implementation of the Constitutional Safeguards for welfare of Scheduled Castes and Scheduled Tribes. The committee has since been constituted as a Standing Committee of Parliament, the tenure of its members being one year.

WELFARE DEPARTMENTS IN STATES

State government and union territory administrations have separate departments to look after the welfare of Scheduled Castes and Scheduled Tribes and other other Backward classes. Administrative set-up varies from state to state. In Bihar, Madhya Pradesh and Orissa, seperate ministers have been appointed to look after tribal welfare as prescribed in Article 164 of the Constitution. Some other states have set-up committees of members of State Legislatures on the pattern of Parliamentary Committee at the centre.

All the states having scheduled areas including Tamil Nadu and West Bengal have constituted Tribal Advisory Councils as per the provision in the Fifth Schedule to the Constitution to advise on matters pertaining to welfare and advancement of Scheduled Tribes.

VOLUNTARY ORGANISATIONS

A number of voluntary organisations also promote welfare of Scheduled Castes and Scheduled Tribes. Among them, the important organisations of

All India Character are: Harijan Sevak Sangh, Delhi; Indian Red Cross Society, New Delhi; Hindu Sweepers Sevak-Samaj, New Delhi; Ramakrishna Mission, Naredrapur; Bharatiya Adimjati Sevak Sangh, New Delhi; Andhra Rashtra-Adimjati Sevak Sangh, Nellore; Ramakrishna Missions, Cherrapunji, Ranchi, Puri, Silchar, Shillong and Purulia; Bharatiya Samaj Unnati Mandali, Bhivandi in Maharastra, Thakkar Bapa Ashram, Numakhandi, Orissa; Servants of India-Society, Pune, Maharashtra, and Social Work and Research Centre, Tilonia, Rajasthan. The Government also provides grants-in-aid to the non-official voluntary organisations working among Scheduled Castes and Scheduled Tribes.

STRATEGY FOR DEVELOPMENT OF SCHEDULED CASTES

A three-pronged strategy has been evolved to speed-up the development of Scheduled Castes: Special Component Plans of the Central Ministries and state governments, (b) special Central Assistance to the special component plans for the Scheduled Castes of the states and (c) Scheduled Caste development Corporations in the states.

Special Component Plans (SCPs) envisage indentification of schemes under general sector of development which would be of benefit to the Scheduled Castes, quantification of funds from all divisible programmes under each sector and determination of specific targets as to the number of families which are to be benefitted from these programmes under each sector. Overall objective is to assist the Scheduled Caste Families to substantially improve their income. Provision of basic services and facilities and access to opportunities for social and educational development are also to be brought into Special Component Plans.

(Rs. Crore)

Year/ Period	Outlay	Expenditure
VI Plan	4,204.00	3,533.00
VII Plan	7,431.27	6,973.87[1]
1985-86	1,001.03	946.75
1986-87	1,227.35	1,151.63
1987-88	1,450.27	1,330.40
1988-89	1,644.56	1,600.17
1989-90	2,108.06	1,944.92[1]
VII Plan		
1990-91	2,245.50(Estimated)	

[1] Includes the anticipated expenditure during 1989-90 in respect of some of the states/UTs.

Central Ministries/Departments have also begun to formulate Special Component Plans for Scheduled Castes. So far, only ten Central Ministries/ Departments have formulated such plans.

SPECIAL CENTRAL ASSISTANCE

The Government provides Special Central Assistance (SCA) to States Special Component Plans for Scheduled Castes. Special Central Assistance is an additive to State Plans and Programmes for Scheduled Castes. It is additionality to the totality of state efforts for development of Scheduled Castes. This is to be used by them only for income-generating economic development schemes in conjunction with outlays in their Special Component Plans so as to assist economic advancement of the maximum possible number of Scheduled Caste Families living below the poverty line. Assistance is apportioned among state governments and union territory administrations taking into account factors like Scheduled Caste Population, backwardness of states and efforts of state government. Special Central Assistance has helped in motivating state governments to put in larger outlays in their Special Component plans as shown in table 10.4 below:

TABLE 10.1 CENTRAL ASSISTANCE

(Rs. Crore)

Year	State Plan Outlay	SCP Outlay	Percentage	Special Central Assistance
1979-80	5,967.03	240.54	4.03	5
1980-81	7,140.31	547.84	7.67	100
1981-82	8,229.31	632.76	7.69	110
1982-83	9,445.49	675.76	7.15	120
1983-84	11,120.80	754.86	6.79	130
1984-85	12,504.38	24.15	7.39	140
1985-86	13,303.56	1,001.03	7.52	165
1986-87	16,222.53	1,227.35	7.41	175
1987-88	19,039.84	1,450.27	7.62	175
1988-89	20,412.50	1,644.56	8.19	180
1989-90	22,343.90	2,108.06	9.19	180

SCHEDULED CASTE DEVELOPMENT CORPORATIONS

With a view to effectively tackling operational aspects involved in implementation of economic programmes for Scheduled Castes, particularly in the mobilisation of institutional credit for income-generating schemes, the Government decided to encourage establishment of Scheduled Caste Development Corporations (SCDCs) in states which have significant population of Scheduled Castes. At present, 21 such corporations are functioning in the country. The corporations were formed as an interface between SC families and financial institutions in respect of bankable schemes of economic development. They were also required to function as guaranteers and promoters and to act as a catalyst by providing missing inputs by contributing seed money or margin money loans to Scheduled

Castes Entrepreneurs. Margin money loans are intended to help in a number of ways. By sharing the loan burden with financial institutions, the corporations help in demonstrating their involvement, inducing banks to come forward with loans for schemes for Scheduled Castes in a big way. While there is a large number of financial institutions to finance the ventures of those who can afford to start industries, businesses, etc. there are no institutions which can support poor SC Families living below the poverty-line, generally. This responsibility has been entrusted to SC Development Corporations.

Under this scheme, Government is participating in the share capital investment of these corporations at the rate of 49 per cent as against 51 per cent investment by the state governments. Share capital is intended to be used towards margin money loans. The scheme was amplified in July 1981 to include assistance for promotional activities and staff for monitoring, evaluation, technical support and recovery wings. Grant-in-aid for promotional activities is subject to a maximum of one per cent and for staff for monitoring and evaluation subject to three per cent of the Centre's cumulative share capital contribution to a corporation. Central Grant for these purposes can be availed of by the state governments, provided matching share is contributed by them.

Total expenditure by Government and states/UTs from 1978-79 to 1989-90 including matching assistance for promotional activities, etc. is shown in Table 10.21

TABLE 10.2 GRANT FOR SCHEDULED CASTES DEVELOPMENT CORPORATIONS

(Rs. lakh)

Plan	Central Share	State Share
I. Fifth Plan (1978-79 to 1979-80)	1,274.00	1,413.65
II. Sixth Plan (1980-85)	6,883.34	7,455.29
III. Seventh Plan		
1985-86	1,500.00	1,755.21
1986-87	1,458.56	1,982.15
1987-88	1,300.00	1,488.52
1988-89	1,000.00	1,040.82
1989-90	2,103.49	2,789.35
IV. Eighth Five-Year Plan (1990-95)	294	356
1990-91	17 (8.50 released already)	17.70
1990-91	850.00	

Budget provision during 1990-91 for Government contribution to share capital of corporations and for grant-in-aid for matching assistance is Rs 17 crore, of which 50 per cent has been released to states/UTs on 1st September, 1990.

Scheduled Caste Development Corporations have been set-up to render economic assistance to poor Scheduled Caste Families to enable them to cross the poverty-line. These are service-oriented organisations instead of profit-making ones. Recoveries made form margin money loans given by these corporations are re-invested in giving margin money loans to more beneficiaries.

During the Sixth Plan, the corporations assisted over 28.69 lakh SC families. Total finance generated by them was Rs 578 crore. Margin money loans amounting to Rs 106.69 crore were able to attract bank loans worth Rs 370.84 crore. In addition, the corporations disbursed subsidy amounting to Rs 100.50 crore. During Seventh Five-Year Plan, SCDCs were able to economically assist 27.22 lakh SC families. As per available information, SCDCs arranged margin money loans amounting to Rs 139.75 crore during this period. This enabled them to secure bank loans worth Rs 623.94 crores. In addition, SCDCs disbursed subsidy amout to Rs 366.99 crore. Total assistance given was Rs 1130.68 crore. During Eighth Five-Year Plan (1990-95), it is proposed to assist 35 lakh families below poverty-line through SCDCs. Hence, an outlay of Rs 650 crore (including 20 crore of arrears of previous years of some of the SCDCs' Share Capital and matching assistance, etc.) will be required to provide towards Share Capital and other support to SCDCs.

NATIONAL SCHEDULED CASTES AND SCHEDULED TRIBES FINANCE AND DEVELOPMENT CORPORATION

The National Scheduled Castes and Scheduled Tribes Finance and Development Corporation has been set up by the Government of India under Section 25 of the Companies Act, 1956 and is functioning with effect from 8 February, 1989, with an authorised Share Capital of Rs 1000/- each and paid-up Share Capital of Rs 50 crore held entirely by the Central Government.

The objective of the corporation is to stimulate economic development of Scheduled Castes and Scheduled Tribes and also identify and fill in the critical gaps in the programmes of State-Level Scheduled Castes Development Corporations and other agencies. It is also to function as an apex institution for the agencies engaged in the economic development of Scheduled Castes and Scheduled Tribes. The corporation also plays a catalystic role in developing schemes for employment generation and financing pilot programmes which can later be taken up by the state-level corporations and other agencies engaged in this field.

The corporation aims to cover 5,50,000 Scheduled Castes and Scheduled Tribes Families living below the poverty-line during Eighth Five-Year Plan (1990-95). Commencing from 50,000 families in 1990-91, the physical targets have increased in the successive years of the Eighth Five-Year Plan touching two lakh mark in 1994-95. The total Share Capital requirements of NSFDC would be Rs 530 crore during Eighth Five-Year Plan (1990-95) of which Rs 200 crore will be provided by the Government of India and remaining amount of Rs 330 crore will be contributed by NSFDC. The total requirements during Eighth Five-Year Plan and during 1990-91 is as under:-

(Rs. Crore)

Year	Contribution by NSFDC	Contribution by The Government of India	Total requirement
VIII Five-Year Plan (1990-95)	330	200	530
1990-91	25	Nil	25

NSFDC have assisted so far (upto 31.12.1990) for taking up their various projects/programmes to different States/UTs through respective SCDCs as under:-

Sl.No.	Total Cost of Project	NSFDC's Share	No.of beneficiaries
1. (upto 31.12.90)	15,975.00	9,201.35	1,16,052

Some important Centrally-Sponsored Schemes are:-

COACHING AND ALLIED SCHEME FOR SC/ST CANDIDATES

The objective of this scheme is to improve representation of Scheduled Caste and Scheduled Tribe candidates in various posts/services in Central/ state government/public undertakings by providing them pre-examination training for various competitive examinations like IAS, IPS and other Central and state service examinations, bank competitions, LIC, GIC, NDA, CDS, etc. This is a two-tier scheme. Pre-examination training centres run by states/UTs are financed by the Central and state governments on 50:50 basis. Training Centres run by the universities/ institutions, etc., are financed by the centre on cent per cent basis. At present, 103 pre-examination training centres have been set-up.

During 1989-90, Rs 63 lakh was released to states/UTs, universities and private institutions. Rs 115 had been provided in 1990-91. During 1987-88, 15,450 SC/ST candidates were trained by pre-examination on training centres including those run by Staff Selection Commission for various competitive examinations. SC/ST candidates were finally selected for appointment in Civil Services Examination during the last ten years including 46 in 1989. Arrangements have been made to provide coaching to such candidates for entrance examination for admission in medical/ engineering colleges and so on. In Delhi, this work has been entrusted to a reputed private institution for providing coaching to 200 SC/ST candidates. States/UTs are to provide computer training to candidates for better employment opportunities.

GIRLS HOSTELS SCHEME FOR SCHEDULED CASTES

Under this scheme, Central assistance is provided to state government/ union territories on 50:50 matching basis for the construction of hostel buildings with a view to providing hostel facilities to Scheduled Caste girls studying in middle and higher-level of education. Central grant is also given to voluntary organisations through concerned state governments for needful extension of existing hostel buildings. In this case, ten per cent of the total cost is to be borne by the organisation and remaining 90 per cent is to be borne by the organisation and remaining per cent is to be shared between Central and state governments on 50:50 basis. In such a hostel, upto 100 inmates can be accommodated. Of this, ten per cent seats are reserved for non-SC/ST. Expenditure on maintenance of these hostels is to be borne by the State Government out of their own funds. More than 2,000 hostel buildings have been constructed/sanctioned so far for providing hostel accomodation to about one lakh Scheduled Caste girls in various states/union territories. Rs 352.00 lakh was sanctioned for this scheme during 1989-90 for the construction of 85 hostels for 5,756 inmates while Rs 800 lakh were provided in 1990-91.

BOOK BANK SCHEME

This scheme is intended for Scheduled Caste and Scheduled Tribe candidates pursuing medical and engineering degree courses. A set of text books costing Rs 5,000 is given to a group of three students, the life period of the set being three years. During 1989-90, Rs 58 lakh was sanctioned to various states/union territories for 26,064 SC/ST students and Rs 100 lakh were provided for this scheme in 1990-91.

BOYS HOSTELS FOR SC/ST

The Centrally-Sponsored Scheme for girls hostels has been extended to SC/ST boys also from 1989-90. A token provision of Rs 50 lakh was made for this scheme during 1989-90. Rupees eight crore has been provided for this scheme during 1990-91.

POST-MATRIC SCHOLARSHIPS FOR SC/ST STUDENTS

The Scheme of Post-Matric Scholarships to SC/ST was introduced in 1944-45 with the objective of providing financial assistance to students studying at post-matriculation stages in different schools and colleges so as to enable them to complete their education. Beginning with a mere 114 awards to Scheduled Caste students in 1944-45 and 89 for Scheduled Tribes students in 1948-49, number of awards to them had reached 9.74 lakh in 1985-86. The number of awards in both these categories together increased to 11.79 lakh in 1987-88 and over 13 lakh during 1989-90. Keeping in view the rising cost of living and other factors, rates for all courses and income limits of parents/guardians/awards for eligibility of scholarships have also been revised from 1 July, 1989. From 1988-89, employed students with a total income of Rs 1,500 per month are made eligible for scholarships, restricted to reimbursement of compulsory non-refundable dues/fees, etc. Reimbursement of non-refundable fee is permissible from 1 July, 1989, for students pursuing recognised correspondence courses including continuing and distance education within the country.

RESEARCH AND TRAINING

The Government provides cent per cent financial assistance to reputed Social Science research agencies/ institutions which have a proven expertise in studies on economic development, problems and requirements of Scheduled Castes and also on the impact of implementation of various economic programmes undertaken by Government Bodies. Studies which come out with practical recommendations and need immediate remedial action are considered for financial assistance under the scheme.

RESERVATION IN SERVICES

Article 335 of the Constitution provides that the claims of Scheduled Castes and Scheduled Tribes shall be taken into consideration consistent with the maintenance of efficiency of administration in making appointment to posts and services in connection with the affairs of the Union or the State. Article 16(4) permits reservation in favour of citizens of Backward Classes who may not be adequately represented in services. In persuance of these provisions, the Government has made reservations for Scheduled Castes and Scheduled Tribes in services under its control.

TABLE 10.3 RESERVATION OF SEATS IN LEGISLATURES
(As on 8 January, 1990)

State/ Union Territory	Lok Sabha				Legislative Assembly			
	Total	General	SC	ST	Total	General	SC	ST
1. Andhra Pradesh	42	34	6	2	294	240	39	15
2. Arunachal Pradesh	2	2	—	—	60	1	—	59
3. Assam	14	11	1	2	126	102	8	16
4. Bihar	54	41	8	5	324	248	48	28
5. Goa	2	2	—	—	40	39	1	—
6. Gujarat	26	20	2	4	182	143	13	26
7. Haryana	10	8	2	—	90	73	17	—
8. Himachal Pradesh	4	3	1	—	68	49	16	3
9. Jammu and Kashmir	6	6	—	—	76	70	6	—
10. Karnataka	28	24	4	—	224	189	33	2
11. Kerala	20	18	2	—	140	126	13	1
12. Madhya Pradesh	40	25	6	9	320	201	44	75
13. Maharashtra	48	41	3	4	288	248	18	22
14. Manipur	2	1	—	1	60	40	1	19
15. Meghalaya	2	2	—	—	60	5	—	55
16. Mizoram	1	—	—	1	40	1	—	39
17. Nagaland	1	1	—	—	60	1	—	59
18. Orissa	21	13	3	5	147	91	22	34

State/ Union Territory	Lok Sabha Total	General	SC	ST	Legislative Assembly Total	General	SC	ST
19. Punjab	13	10	3	—	117	88	29	—
20. Rajasthan	25	18	4	3	200	143	33	24
21. Sikkim	1	1	—	—	32	18	2	12
22. Tamil Nadu	39	32	7	—	234	189	42	3
23. Tripura	2	1	—	1	60	36	7	17
24. Uttar Pradesh	85	67	18	—	425	332	92	1
25. West Bengal	42	32	8	2	294	218	59	17
26. Andaman and Nicobar Islands	1	1	—	—	—	—	—	—
27. Chandigarh	1	1	—	—	—	—	—	—
28. Dadra and Nagar Haveli	1	—	—	1	—	—	—	—
29. Daman and Diu	1	1	—	—	—	—	—	—
30. Delhi	7	6	1	—	56	47	9	—
31. Lakshadweep	1	—	—	1	—	—	—	—
32. Pondicherry	1	1	—	—	30	25	5	—
Total	543	423	79	41	4,047	3,963	557	527

For the Scheduled Castes, reservation si 15 per cent of the vacancies for which recruitment is made by open competition on an All India Basis and 16-2/3 per cent of the vacancies to which recruitment is made on All-India Basis otherwise than by open competition. For Scheduled Tribes, reservation is 7-1/2 per cent in both cases. Reservation in direct recruitment to Group C and D posts which normally attract candidates from one locality or region is fixed in proportion to the population of scheduled castes and Schduled Tribes in respective states/UTs. 15 per cent of reservation of the vacancies is for Scheduled Castes and 7-1/2 per cent for Scheduled Tribes in promotions on the result of competitive examinations limited to departmental candidates in Group B,C, and D and in promotion by selection in Group B,C and D and to the lowest-rung of Group A in grades or services to which element of direct recruitment, if any, does not exceed 75 per cent. Reservation has been provided for Scheduled Castes and Scheduled Tribes in promotion on the basis of seniority subject to fitness in Group A,B,C and D posts in grades or services to which element of direct recruitment, if any, does not exceed 75 per cent.

In promotion by selection within Group A to posts carrying a maximum salary of Rs 5,700 (revised scale 4,500-5,700) per month or less, Scheduled Castes and Scheduled Tribes officers who are senior enough in the zone of consideration for promotion so as to be within the number of vacancies for which the select list has to be drawn, are included in that list provided they are not considered unfit for promotion.

To facilitate their adequate representation, concessions such as: (i) relfaxation of age limit, (ii) relaxation in the standard of suitability, (iii) selection provided they are not found unfit for the posts, (iv) relaxation of qualification regarding experience in the case of direct recruitment only, wherever necessary and (v) inclusion of scientific and technical posts upto the lowest grade of Group A required for research in the scheme of reservations, have been provided for. Scheduled Castes and Scheduled Tribe candidates who qualify for direct recruitment without applying relaxed standard are not adjusted against reserved vacancies. Simultaneously, with notification to employment exchanges or advertisements in newspapers, vacancies and reservations for Scheduled Castes and Scheduled Tribes in Group C and D (Class III and IV) posts are announced over All India Radio in areas having a concentration of Scheduled Castes and Scheduled Tribes population and notified to voluntary associations of Scheduled Castes and Scheduled Tribes population, enlisted for this purpose and to Directors of SC/ST Welfare in the states and union territories. Vacancies filled through Union Public Service Commission otherwise than through examination, are advertised on the first occasion as exclusively reserved for Scheduled Castes/Tribes and are re-advertised if the first advertisement is infructuous. Dereservation of vacancies for direct recruitment in Group A,B,C and D has since been banned (with exception in certain rare cases of Group A). If sufficient number of suitable SC/ST candidates are not available against the share of vacancies reserved for them, the shortfall will not be filled-up by general category candidates and such vacancies will be kept unfilled till SC/ST candidates become available. Reservation for Scheduled Castes and Scheduled Tribes (including vacancies carried forward) is subject to the ceiling of 50 per cent of the total number of vacancies. This scheme of reservation is also being followed by Public Sector Undertakings. Voluntary agencies which are in receipt of substantial grant-in-aid from the Government, are also required, as a condition, to adopt certain specific features of the reservation scheme in their respective establishments.

To give effect to the reservation, two model rosters of 40 points each have been prescribed for direct recruitment by open competition on All-India Basis and otherwise than open competition. State-wise/union territory-wise 100 point rosters for recruitment made on local and regional basis have also been prescribed. For promotions, 40 point roster used for direct recruitment on All India Basis by open competition is used. If the vacancies in a service or cadre are too few for the purpose, applying reservation orders in direct recruitment to all isolated posts which are identical in respect of qualifications, pay-scale etc. are grouped together group-wise. Annual staements are required to be submitted by recruiting authorities for scrutiny by Government. For ensuring implementation of special representation orders, liaison oficers have been appointed in different Government Ministries/Departments.

State Governments have also framed rules under the powers given to them by item 41 of the State List of the Seventh Schedule to the Constitution for reservation of posts for these classes and have taken steps to increase their representation in state services. Reservation in state government services, however, is under the exclusive jurisdiction of state governments.

Representation of Scheduled Castes and Schedueld Tribes in Central Government Services as on 1st January, 1990, is given in table. 10.2.

STRENGTH OF CENTRAL GOVERNMENT EMPLOYEES (AS ON 1.1.90)

	Group A						Group B		Group C		Group D				Total Employees			
	Total		Lowest Rung		Other Than Lowest Rung						Excluding Sweepers		Sweepers		Excluding Sweepers		Including Sweepers	
	No. and Percentage Indication																	
Total Employees	61,686		17,297		44,389		92,968		2217234		1105165		101281		3477053		3572788	
SC	5,331	8.64	1,788	10.3	3,543	7.98	10,497	11.29	3,36,880	15.19	2,37,400	21.48	84,395	83.33	5,90,108	16.97	6,73,303	18.85
ST	1,593	2.58	513	2.97	1,080	2.43	2,222	2.39	1,07,103	8.83	74,327	6.73	3,026	2.99	1,85,245	5.33	1,87,497	5.25

SCHOLARSHIPS FOR SC/ST STUDENTS

The Ministry of Welfare has been implementing Government of India's National Overseas Scholarships and Passage Grants for students belonging to Scheduled Castes, Scheduled Tribes and others. It is in operation since 1954-55. The scheme is to provide adequate financial assistance and facilities for meritorious students belonging to Scheduled Castes, Scheduled Tribes and a few other similarly situated socially and economically backward groups who are Citizens of India and do not have means to go abroad for higher studies especially in respect of those subjects for which facilities are either not available in India or are inadequate within the country, namely, subjects relating to science and technology.

Scholarships are provided for studies at Bachelor's degree in printing technology, post-graduate and ph.D. post-doctoral research levels. No scholarship is now available for subjects and fields concerned with Indian studies, agriculture and allied subjects, vaterinary science and medical sciences. During the Sixth Plan, the aimber of awards available for each years was 21. It is inscreased to 25 from 1985-86. According to the existing pattern of the scheme, value of scholarships includes: (a) maintenance allowance US $7,000 and US $6,000, US $5,400 for graduates per annum for post-doctoral and ph.d., studies, respectively: (b) contingency allowance (for purchase of books, study tours, etc.). Us $350 per annum, and (c) equipment allowances of Rs.1,000 and journey allowance. In addition, scholars are also entitled to the cost of passage both ways, train fare, actual cost of admission, tution fees, examination and other compulsory fees and medical health insurance premium.Al expenditure on scholars in connection with their studies/stay is borne by the Government.

PRE-MATRIC SCHOLARSHIPS

Beginning in 1977-78, this scheme, is for eductional development of children of those who are engaged in the so-called unclean occuptions, viz., scavenging of dry latrines, tanning, flaying and sweeping, studying in classes VI to X. A scholarship of Rs.200 and Rs.250 per month is given to each student studying in classes VI to VIII and IX to X respectively.

LIBERATION OF SCAVENGERS

Under this scheme financial assistance is provided to States for conversion of dry latrines into water-uour sanitary latrines. Displaced scavangers are rehabilitated in alternative employment simulataneously. Rehabilitation is funded under special central assistance to the State Governments. S far, about 9.63 lakh dry latrines have been converted into water-pour latrines in 19 States, more than 15,000 scavengers rehabilitaged and 40 towns made scavenger free.

DEVELOPMENT OF SCHEDULED TRIBES

Two hundred and fifty eight communities speaking about 106 languages have been notified as Scheduled Tribes in 26 states/union territories. They are scattered all over the country. Amongst them are groups as large as about 61 lakh and as small as 18.

Tribal development is based on a two-pronged strategy, namely, (i) promotion of development activities to raise the leval of living of Scheduled Tribes and (ii) protection of their interests through legal and administrative support. The Tribal Sub-Plan Strategy (TSP) evolved for tribal development during the Fifth Plan, presently covers eighteen states and two union territories. It is implemented through 193 Integrated Tribal Development Projects covering 311.97 lakh ST population, 249 MADA Pockets with population of 39.95 lakh, 77 clusters of tribal concentration with 3.45 lakh and 74 primitive tribal groups with about 16.36 lakh population

Tribal Sub-Plan is being implemented through financial resources drawn from: (a) State Plan, (b) Special Central Assistance, (c) Sectoral Programmes of Central Ministris/Departments and (d) Institutional Finance-As against an investment of Rs 1,100 crore during Fifth Plan Period, investment for Sixth Plan was of the order of Rs 5,535 crore and during Seventh Plan, it was of the order of Rs 10,000 crore. Working Group on Development and Welfare of Scheduled Tribes for Eighth Five-Year Plan has recommended new arrangements for quantification of funds under Tribal Sub-Plan. Outlays for TSP in State Plans are earmarked separately under each Sector for Schemes/Programmes prepared by them for development of Scheduled Tribes.

Twenty-point Programme continues to focus greater attention on development of Scheduled Tribes. During the Sixth Plan period (1980-85), 39.65 lakh families as against the target of 27.60 lakh were economically assisted to enable them to cross the poverty line. For the Seventh Plan Period (1985-90), 41.55 lakh tribal families were targetted to be provided economic assistance. Against this, 52.88 lakh families were assisted.

TRIBAL RESEARCH INSTITUTES

Tribal Research and Training Institutes have been functioning in Andhra Pradesh, Assam, Bihar, Gujarat, Kerala, Madhya Pradesh, Manipur, Maharashtra, Orissa, Rajasthan, Uttar Pradesh, Tamil Nadu and West Bengal. They play a useful role in formulation of Tribal Sub-Plan, monitoring and evaluation of programmes implemented for Scheduled Tribes and organising of training programmes for personnel. All these institutes except Manipur and Uttar Pradesh have tribal museums exhibiting tribal artifacts.

TRIFED COOPERATIVE MARKETING DEVELOPMENT FEDERATION OF INDIA (TRIFED)

In order to save tribals from exploitation by private traders and to ensure them remunerative prices for their minor forest produce and surplus agriculture produce, the Government of India has set up in August 1987 Tribal Cooperative Magrketing Development Federation of India Ltd., (TRIFED). This has an authorised share capital of Rs 20 crore. It started effectively functioning from April, 1988. TRIFED handled about 12 items in the first year 1988-89 of its operation. In almost all the items, the price offered to tribals by TRIFED was higher than the price given to them in the previous years. During the second year (1989-90), the TRIFED expanded its activities to cover a number of new items. It has been appointed as a canalising agency for the export of Gum Keraya and Nigher Seeds of tribal area and has also been declared the central nodal agency for collection, processing, storage and development of oilseeds of tree and forest origin.

VOLUNTARY ORGANISATIONS

The Ministry of Welfare provides financial assistance upto 90 per cent to voluntary organisations of All-India nature engaged in the development of Scheduled Tribes, Grants are given to them for undertaking schemes, namely, running of Balwadis, creches, hostels, schools and training-cum-production centres. During 1989-90, 34 voluntary organisations were given financial assistance amounting to rupees one and half crore.

WELFARE OF MINORITIES

To uphold the ethos of the Indian Constitution and to maintain its distinctive character of having a secular and egalitarian society, provisions were made to safeguard the interests of Minorities whether based on religion or language. In order to maintain a constant vigil and review implementation of the Constitutional Safeguards to different groups of Minorities, Minorities Commission was constituted in 1978. It has a Chairman and four other members belonging to different Minority Communities. Among the functions entrusted to the commission are: evaluation of the working of various safeguards provided in the Constitution, making recommendations to ensure effective implementation of safeguards, reviewing of implementation of policies pursued by the Union and the state governments; looking into specific complaints regarding deprivation of rights and safeguards, making surveys and research; suggesting appropriate legal and welfare measures in respect of any minority requiring special protection and submission of periodical reports to Government. Special Officer for Linguistic Minorities also commonly called as Commissioner for Linguistic Minorities appointed under Article 350 B of the Constitution investigates all matters relating to safeguards provided for Linguistic Minorities and also looks into representations and complaints received from various associations and individuals belonging to Linguistic Minorities for redressal of their grievances.

The Government established a special cell, Minorities Cell, in 1983 in accordance with a 15-point programme enunciated by the then Prime

Minister. This Programme is implemented through state governments and union territory administrations and Central Ministries/Departments with the Ministry of Welfare acting as the nodal agency for the overall welfare of Minorities. Minorities Cell of the Union Government ensures fuller Participation of Minorities in all aspects of national life for coordinating and monitoring implementation of the 15-point programme and for expeditious action of Minority grievances. Some of the states/UTs have also set up Minority Cells. Monitoring of the programme is regularly carried out by Government on the basis of information received from states/UTs. The 15-point programme broadly aims at prevention of communal violence and promotion of communal harmony; laying special emphasis on technical educational needs of minorities; according special consideration to the minorities in the matter of recruitment to services especially in state and Central Police Forces with a view to ensuring that they are not discriminated against or nurse a feeling of being discriminated against and ensuring fair and adequate share to Minorities in the benefits flowing from various development programmes.

WAKFS

Wakfs are permanently dedicated movable or immovable properties for any religious, pious or charitable purpose recognised by Muslim law. Wakfs are infact instruments of social good. Better management of these institutions and fuller realisation of their objectives contribute, in the ultimate analysis, to the development and progress of the society.

THE WAKF ACT, 1954

Administration of Central Legislation for Wakfs, i.e., the Wakf Act, 1954, is the responsibility of the Ministry of Walfare. This Act, however, does not extend to the states of Jammu and Kashmir and Sikkim. It is not in force in Uttar Pradesh and West Bengal who have their own Wakf Laws. Parts of Gujarat and Maharashtra are also not governed by this Central Act. The Wakf Act, 1954, envisages a decentralised set-up. While a Mutawalli (Managdr) of each individual Wakf retains his autonomy in discharge of his responsibilities, general superintendence of all Wakfs in a state vests in the Wakf Board set up by each state government which has to ensure that the Wakfs are properly maintained and administered and that their income is duly applied to objects for which such Wakfs were created. The board has its own office and staff and its own funds composed of a statutory contribution realised from different Wakfs.

Overall supervision of the Wakf Board vests with the concerned state government which appoints members of the board and its secretary. Copy of the annual budget of the board is forwarded to the state governments which also appoints auditors for auditing its accounts. It also has powers to issue directions to the board and in certain cases supersede it. Central Government has powers to issue directions to a board on matters of policy.

Central Government is advised on matters relating to administration of WAKFS by a statutory body known as Central Wakf Council which is headed by the Union Minister incharge of the subject of Wakf.

In order to further strengthen administration of wakfs, an amending legislation known as the Wakf (Amendment) Act, 1984, has been passed. The question of enforcement of the other provisions is under active consideration of the Central Government. With a view to augmenting financial resources of individual Wakfs/Wafk Boards, the Central Government gives an annual grant-in-aid to the Central Wakf Council for extending loan assistance for the development of Urban Wakf Properties. Upto 31 March, 1990, the Central Government had given Rs 636.64 lakh to the Central Wakf Council as grant-in-aid. The provision for 1990-91 is Rs 65 lakh. So far, 64 developmental projects have derived benefit from this scheme, of which 16 have already been completed. Central Government also assists Wakf Boards through state governments in solving problems of common concern. The council provides financial assistance every year to poor and needy students and students of technical degree courses. In order to give a boost to the educational activities of the council, the "Maulana Azad Education Foundation" has been established as a registered society under the Societies Registration Act on Sixth July, 1989. The foundation has been established with the specific purpose of removing educational backwardness among the Muslims Minorities as also to create awareness about various national programmes.

DURGAH KHWAJA SAHEB, AJMER

The internationally famous WAKF, namely Durgah of Hazrat Khwaja Moinuddin Chisti at Ajmer is governed by the Durgah Khwaja Saheb Act, 1955. This endowment is managed by a Centrally-Appointed Committee known as Durgah Committee which is assisted by an officer known as Nazim. The committee has its own funds; and among other things, looks after welfare of devotees visiting the Durgah. It runs two dispensaries and has constructed six multi-storeyed guest-houses to provide accomodation at economical rates to pilgrims.

PUNJAB WAKF BOARD

Ever since the reorganisation of the erstwhile composite State of Punjab in 1966, Punjab Wakf Board continues to be an inter-state body corporate functioning in the areas which now comprise the reorganised states of Punjab, Haryana and Himachal Pradesh and the Union Territory of Chandigarh. Thereafter, from 1966 onwards, powers of state governments under the Wakf Act, 1954, have from time to time, been assumed and excercised by the Central Government. The Punjab Wakf Board has been reconstituted by the Central Government from time to time with members drawn from all regions concerned. The board is under supersession since November, 1982. Central Government has appointed an administrator to manage and look after the affairs of the board.

There has been considerable improvement in almost all activities of the board including expansion of its welfare activities. The board has also been assisting widows/destitutes and also giving scholarship/financial assistance to the needy students.

MANDAL COMMISSION

The Government took a decision to reserve 27 per cent of the vacancies in civil posts and services under the Government of India, Central Public Sector Undertakings and Central Financial Institutions including banks in favour of socially and educationally backward classes on the basis of recommendations of the Mandal Commission. An announcement to this effect was made in the two Houses of Parliament on 7 August, 1990 and formal orders to this effect were issued by the Ministry of Personnel, Public Grievances and Pensions (Department of Personnel and Training) on 13 August, 1990.

Pursuant to the filing of several Writ Petitions challenging the Government's order on reservation, a Constitution Bench of the Supreme Court has directed that no steps for implementation of the order except identification of the castes to be benefitted shall be taken until the matter is heard.

CENTENARY CELEBRATIONS OF BHARAT RATNA BABA SAHEB, DR BHIM RAO AMBEDKAR

The Government of India observed the Birth Centenary of Dr B.R. Ambedkar from 14 April, 1990 to 14 April, 1991. A National Committee under the Chairmanship of the Prime Minister with Union Welfare Minister as Deputy Chairman was constituted on Sixth June, 1990, for identifying and finalising the concrete programmes. A Standing Committee under the Chairmanship of Union Labour and Welfare Minister was also constituted. Thereafter, seven sub-committees were constituted to identify and recommend various programmes. These are: Economic Development Committee; Planning and Programme Committee; Education Committee; Land Reforms Committee; Reservation Implementation Committee; Prevention of Atrocities and Legislation Committee and Publicity and Media Committee.

The period of the Centenary Celebrations would be upto 14 April, 1992. The period from 14 April, 1990 to 1991 is being used for preparatory work and for formulation of action plan and commencement of implementation to the extent possible. Implementation of action plan would last upto 14 April, 1992. Work already done uptil now as part of the Centenary Celebrations includes Government having launched the Centenary Celebrations by conferring "Bharat Ratna" on Baba Saheb; The year 1990-91 declared as the "Year of Social Justice"; Baba Saheb's 99 Birth Day on 14 April, 1990, was declared a National Holiday; 14 April, 1990, was celebrated with a Virat Sammelan at Ambedkar Stadium, New Delhi;

Article 338 of the Constitution was amended replacing the Special Officer (Commissioner) for Scheduled Castes and Scheduled Tribes with the National Commission for Scheduled Castes and Scheduled Tribes as a constitutional body with additional powers and functions; and the status of Scheduled Castes given to Neo-Budhists.

PROGRAMME PERTAINING TO CENTENARY YEAR CELEBRATIONS

The Centenary Year Celebration Programmes pertaining to correct orientation of developmental plans includes dedication of Eighth Plan to Baba Saheb, Dr B.R. Ambedkar and sub-titled as "Plan for Socio-Economic Justice," National Programme for Minor Irrigation for SCs and STs– Comprehensive irrigation programme for all irrigable lands of SCs and STs (mainly by wells, bore-wells, check dams, etc) costing Rs 30,000 crore, Liberation of "Scavengers" (Safai Karamcharis) costing Rs 1,100 crore, introduction of new policy to lease/licence natural resources like stone quarries, clay quarries and animal carcasses, etc, which are within the state control, to actual workers and their cooperatives/ associations and the provision of economic support for them. This programme also calls for introduction of economic package for comprehensive development of certain extremely backward communities like Nomadic, Semi-Nomadic, Vimukta Jati Communities and artisans and occupational communities like Barbers, Dhobis, etc. Setting-up of exclusive special courts for day to day trial of atrocities and other crimes against SCs and STs and punishment of those found guilty with deterrent rapidity; legal Reach for SCs and STs; effective implementation of Statutory Minimum Wages for agricultural labour; provision of drinking water in all SC bastis and ST hamlets; Identification, release and rehabilitation of bonded labourers and elimination of conditions which create bondage; and out of the total Eighth Plan Outlay of the Centre and of the states, setting apart for the Scheduled Caste Population and Tribals Population, outlay in proportion atleast equal to the percentage of SC and ST population; and out of the total SCP and TsP outlays so set apart, allocation in accordance with the developmental needs of the SCs and STs and their own priorities are other priorities.

Other Programmes in connection with the Centenary Celebrations which do not involve financial outlay at all or to significant extent are -

(1) Ensuring that SCs/ STs are admitted in all universities and colleges to the fullest extent of reservation.
(2) Removal of backlog in reservation in services under Central Government/ public sector undertaking and other Central institutions and all out efforts to raise the level of representation of SCs/ STs to not less than the population-equivalent proportion in all cadres, levels and categories.
(3) Restoration of alienated lands of SCs and STs.
(4) Implementation of Land Reform Legislations by involving, promoting and encouraging organisations of beneficiaries of Land Reforms

and ensuring that Land Reforms Tribunals are established/activated with representatives of SCs and STs.

(5) Completion of distribution of vacant lands to the SCs and STs and other weaker sections for agriculture as well as house-sites.
(6) National Legislation for agricultural labourers.
(7) Appointment of an SC and an ST Member in the Planning Commission.
(8) Legislation on Reservation for SCs and STs.
(9) Inclusion of life-history of Dr B.R. Ambedkar in the text-books of schools and colleges.
(10) Rescinding of unfair restrictions, which hamper intended benefits for the SCs and STs.

Awards and prizes have been instituted in connection with the centenary celebrations. Six personalities per year will be given national awards and personalities with integrity and character having rendered distinguished service with devotion to the cause of social/ ethenic equality namely in the fields of education, popular/ mass/ development movements, public administration literature, etc. will be awarded international awards. The Ambedkar Prize Award for 'Equality' on a standard comparable to Noble Prize has also been instituted.

The publicity, media and information programme entails issuing of coins and currency notes with the picture of Baba Saheb, Dr B.R. Ambedkar, releasing stamps in his memory, regular broadcasting of 'Sayings' of Baba Saheb over Doordarshan and AIR, broadcasting Radio Serials based on the life and his thoughts, producing and screening a full-length feature film and publication of Dr Ambedkar's complete works in all languages of India and in English as well as to be sold at low prices.

Erection of memorials/ commemoration stupas in places of great struggles/ achievements/ martyrdom like Yervada, Venganoor, Pipra, Podhgaya, Karamchedu, etc, as well as in places in Delhi and elsewhere are part of the centenary celebrations.

WOMEN AND CHILD DEVELOPMENT

The Department of Women and Child Development in the Ministry of Welfare is responsible for formulating policies and programmes for women and children besides coordinating, guiding and promoting the implementation of various programmes by the Central Ministries/Departments, State Governments and Voluntary Agencies. The major thrust of the programmes of the department is to ensure the well-being of children particularly those of weaker sections of the society and bring women in the mainstream of development.

The department has two bureaux: (i) Nutrition and Child Development Bureau, (ii) Women's Development Bureau. Further, the department has two autonomous organisations under it, namely; National Institute of Public Cooperation and Child Development (NIPCCD) and Central Social

Welfare Board (CSWB). The bureau of Nutrition and Child Development is responsible for overall policies and coordination of child development while the Women's Welfare and Development Bureau is entrusted with the responsibility of coordination of policies and programmes for welfare and development of women. NIPCCD is a society registered under the Socities' Registration Act, 1860. It functions under the department and its gamut of activities include research and evaluation studies, organising and conducting training programmes for programme functionaries, organising workshops/seminars and conferences in the area of women and child development. NIPCCD is also an apex body for the training of functionaries of the department's most significant programme, the Integrated Child Development Services (ICDS). The CSWB is a company under the Indian Companies Act, 1956. The board has evolved various programmes in the area of welfare of women , children and the handicapped by harnessing the services of hundreds of voluntary agencies.

CHILD DEVELOPMENT

NATIONAL POLICY FOR CHILDREN

The National Policy for Children was adopted on 22 August, 1974. The policy describes country's children as 'supremely important asset'. It enjoins on the state to provide adequate services to the children both before and after birth and through the period of growth to ensure their full physical, mental and social development. The policy forms a bedrock of child development strategy and implementation of various programmes designed for the development of children. As envisaged in the policy, the National Children's Board was set-up on 3 December, 1974. The board is headed by the Prime Minister as its Chairman. The functions of the board are: (i) plan and review the implementation of programme for the welfare and development of children, (ii) coordinating efforts by different governmental and private agencies in implementing programme for welfare and development of children, (iii) locate gaps in the existing services and suggest measures to eliminate such gaps, (iv) suggest from time to time any changes needed in priorities accorded to different programmes and (v) act as a High-Power National Body to symbolize the commitment of the Nation to the welfare and development of children. The board serves as a national forum for interaction between voluntary agencies and the department.

NATIONAL CHILDREN'S FUND

The National Children's Fund was constituted under the Charitable Endowments Act, 1890 (VI of 1890), during the International Year of the Child, 1979, to finance the activities of voluntary organisations of National, State and District Levels to implement programmes for the welfare of children including rehabilitation of destitute children, particularly preschool children.

INTEGRATED CHILD DEVELOPMENT SERVICES (ICDS)

Following the adoption of the National Policy for Children on 22 August, 1974, the Scheme of Integrated Child Development Services was initiated in 1975 in 33 projects on an experimental basis. This is a Centrally Sponsored Scheme, adopting a multi-sectoral approach to child development. The ICDS has been acknowledged as the single-largest programme of child development. The objectives of ICDS are (i) improving nutrition and health status of children, (ii) laying foundation for proper psychological and social development of child, (iii) reducing mortality, morbidity and school drop-outs, (iv) achieving effective coordination of policy and its implementation among various department to promote holistic child development and (v) enchancing capability of mother to look after normal health and nutritional needs of child through proper health and nutritional education. The strategy adopted in the ICDS is the delivery of integrated package of services, namely, (i) supplementary nutrition, (ii) immunization, (iii) health check-up and referral services (iv) non-formal pre-school education to children (3-6) and (v) nutrition and health education to women. The target group is children of the age group zero to six years and pregnant women and lactating mothers. ICDS projects have been taken up in the selected blocks in the most backward rural and tribal areas and urban slums.

Based on the positive results shown by the International Evaluation Studies and response from state governments, the programme has been expanded quickly and there are at present 2,236 Centrally Sponsored Projects. In addition, 188 projects have been approved in the state sector. Beneficiary of supplementary nutrition under the programme now total upto 122 lakh children and about 24 lakh nursing /expectant mothers. Another 100 projects are being added in the Centrally Sponsored Sector during 1990-91. The focal point for delivery of services in the ICDS is an Anganwadi (one per village) in the sanctioned projects. These Anganwadis number two lakh or so.

In 1990-91, provision made for ICDS was Rs 256.15 crore. This accounts for all components on projects expenditure except the nutrition component, which is funded by the state governments. For nutrition component, apart from state government's contribution, food aid is also available from cooperative for American Relief Everywhere (CARE), World Food Programme (WFP) and through the Centrally Sponsored Wheat Based Nutrition Programme. Several evaluation studies of the ICDS programme speak of beneficial result of the ICDS, which are,-

(i) 2/3rd population covered by ICDS comprising of SC, ST and other Backward Communities,

(ii) ICDS has been able to cross income barriers and reverse usual trend of higher income groups availing of benefits,

(iii) ICDS areas registered significant decline in the incidence of malnutrition,

(iv) Immunization coverage of children in ICDS Project Areas was substantially higher than the coverage in Non-ICDS areas, and

(v) Decline in infant mortality and birth rate and greater acceptance of family planning in ICDS areas.

MULTI-STATE ICDS PROJECT

The Department of Women and Child Development have negotiated proposals for World Bank Assistance for Multi-State Integrated Child Development Services and Tamilnadu Integrated Nutrition Programme (TINP-II)

The Multi-State ICDS Programme will be implemented in the States of Andhra Pradesh and Orissa. The World Bank has agreed to a total assistance of US $ 106 million. The Expenditure Finance Committee (EFC) has approved an outlay of Rs 303.22 crore for both the states. The project would cover 110 blocks in Andhra Pradesh and 191 blocks in Orissa. Apart from providing the normal facilities under the National Programme of ICDS, the project would provide additional inputs in the areas of Women's Income Generation Activities, Women's Integrated Learning for Life (WILL), Services for Adolescent Girls, strengthening of health component and experimenting with nutritional rehabilitation.

TAMIL NADU INTEGRATED NUTRITION PROGRAMME

The Tamil Nadu Integrated Nutrition Programme (TIWP-II) is a State Sector Project. It envisages an outlay of Rs 235.80 crore as the base-line cost. With physical and price contingencies, the outlay taken by the World Bank amounts to Rs 321.36 crore. The World Bank Assistance, which would be 69 per cent of the total project cost will be equivalent to US $ 95.8 million. The project, which would cover 316 projects in Tamil Nadu, envisages to ensure child survival, health and development by improving maternal health and nutrition and, consequently, child nutrition from birth and would also further improve the nutrition and health status of children in the age group of zero to six years.

TRAINING OF INTEGRATED CHILD DEVELOPMENT SERVICES FUNCTIONARIES

Training is an essential input for the success of any development programme. This is particularly true in respect of the most significant programme of Integrated Child Development Services. (ICOS). A comprehensive programme for training of ICDS functionaries is being concurrently taken up alongwith the implementation of ICDS with the active support of the National Institute of Public Cooperation and Child Development (NIPCCD) and other selected training institutions and voluntary organisations recognised by the state governments. Training as well as refresher training is undertaken for all levels of functionaries of ICDS, namely, the Child Development Project Officers (CDPOs), the supervisors and the

Anganwadi Workers, all of which are the grass-root level functionaries of the ICDS project. The Seventh Plan Outlay for ICDS training was Rs 38 crore and the expenditure against this was Rs 41.51 crore. The outlay for 1990-91 has been Rs 12.15 crore. Training is given to CDPOs by NIPCCD and its regional centres at Bangalore, Lucknow and Guwahati.

Twenty Middle-level Training Centres (MLTCs) conduct Job Training Course of three months to orient supervisors to various components of ICDS scheme.

NEW INNOVATIVES IN INTEGRATED CHILD DEVELOPMENT SERVICES

In the implementation of the Integrated Child Development Services (ICDS), Programme, some deficiencies have accured. To remedy these, additions/interventions are proposed to be made in this Programme. These are:

(A) Some of the Anganwadis would be converted into Anganwadi cum-Creche Centres. This is envisaged to solve the problem of low attendance of younger group of children (zero to three years) in the Anganwadis and will also help to boost women's employment as well as retention of older siblings (particularly girls) in the schools.

(B) It is also proposed to provide services to adolescent girls who are not presently covered by any other programme. The services that are to be provided would include health, nutrition, skill development training, etc.

(C) Non-formal Education (Women's Integrated Learning for Life) will be provided to women.

(D) It is proposed to construct about a lakh Integrated Women and Child Development Centres which will be the focal places for services like Creche-cum-Anganwadi Facility, mahila mandal activity, adolescent girls, income generation activities, feeding programme and awareness generation for mothers.

(E) It is also proposed to establish Ready-to-Eat Food Plants (RTE) to provide calorie-dense food to the beneficiaries.

In order to strengthen the pre-school education component of ICDS Resource Centres are being set up at block levels. Suitable materials regarding early childhood education for the use of Anganwadi Workers and supervisors are being made available through these resource centres. Six hundred such centres are being set up and material is being despatched.

CRECHES/DAY CARE CENTRES FOR CHILDREN

This Central Scheme of Creches Day Care Centres for children of poor working and ailing women is implemented through voluntary organisations. The Women and Child Development Department provides grants to Central Social Welfare Board, which in turn, assist voluntary organisations to implement the scheme. Under the scheme, day-care services for the children for the age group of zero to five years are provided. Services include health care, supplementary nutrition, sleeping facilities, immunization and play and recreation for children. Two crech workers per creche unit are employed to look after the children. Recently, this department has started providing grants directly to the two National-Level Organisations, namely, Indian Council for Child Welfare and Bhartiya Adimjati Sevak Sangh. There is a provision for creche workers training and also for institutionalised supervision of creches. This scheme was started in 1975-76 with 247 creche units covering 6175 children. The scheme has been expanded and it now covers 12,230 units benefiting over three lakh beneficiaries.

EARLY CHILDHOOD EDUCATION

Early Childhood Education Programme (ECE) was launched in the Sixth Plan as a distinct strategy to reduce drop-out rate and improve the rate of retention of children in schools. ECE is designed to improve children communication (language), cognitive (social, emotional, intellectual and personality development) skills as a preparation for entry into primary schools. Under the scheme, central Assistance is given to voluntary organisations to run ECE Centres in rural and backward areas. The programme is for implementation in nine educationally backward states of Andhra Pradesh, Assam, Bihar, Jammu and Kashmir, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal.

Under the National Policy on Education, Early Childhood Care and Education (ECCE) has been accorded high-priority. The scheme was transferred to the Department of Women and Child Development in 1987-88. Since then, it expanded dramatically from 1,100 centres in 1986-87 to 4,300 centres by 1987-88. Due to budgetary constraints, the scheme did not expand further.

WHEAT-BASED SUPPLEMENTARY NUTRITION PROGRAMME

This Centrally Sponsored Scheme of Wheat Based Supplementary Nutrition Programme (WBN) for pre-school children and nursing and expectant mothers was introduced from January, 1986, with a view to making use of surplus available wheat stock in the supplementary feeding to improve the nutritional status of children and mothers belonging to weaker sections. This programme is meant to expand the coverage of supplementary nutrition feeding services by covering additional beneficiaries. Central Assistance for the programme comprise of supply of free wheat and supportive cost for other ingredients—cooking, transport, etc. Besides, the Central Government also makes available to state governments additional wheat at issue prices for supplementary nutrition to be paid by them. The WBN Programme is now sought to be completely aligned with ICDS. The present coverage is 30 lakh beneficiaries. The financial provision under the scheme for 1990-91 has been Rs 20 crore.

BALWADI NUTRITION PROGRAMME

Balwadi Nutrition Programme (BNP) is being implemented since 1970-71 through five National-Level voluntary organisations, namely, Central Social Welfare Board, Indian Council for Child Welfare, Harijan Sevak Samaj Sangh, Bhartiya Adimjati Sevak Sangh and Kasturba Gandhi National Memorial Trust. The grant-in-aid under this programme is towards the honorarium for Balsevikas/ Helpers and supplementary feeding to children. About 5600 Balwadis are being run by these organisations. The children in the age group of three-five years (about 2.30 lakh) are covered under the programme. Supplementary nutrition consist of 300 calories and 12-15 grams of proteins per child per day given for 270 days in a year.

CARE ASSISTED NUTRITION PROGRAMME

The Department of Women and Child Development has the nodal responsibility for CARE assistance in India, administering the Indo- CARE Agreement on 6 March, 1950. CARE gives food commodities for supplementary nutrition for pre-school children and nursing and expectant mothers, providing 2,27,821 Metric Tonnes of food commodities (Soya Salad Oil, Corn Soya Blend and Bulger Wheat) in a year to cover 72,71,700 beneficiaries in ten States of Andhra Pradesh, Bihar, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Uttar Pradesh and West Bengal. In addition, non-food projects known as Integrated Nutrition and Development Projects are also funded by CARE, in Karnataka, Madhya Pradesh, Orissa and Rajasthan. For this, CARE has allotted funds generated by monetising of 8000 MT of oil. These funds will be spent for ICDS related non-food projects in Andhra Pradesh, Bihar, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and West Bengal also. The proposal for control of Acute Respiratory Infections (ARI) under CARE, monetising for a period of four years starting from 1990, has been approved by the department. The ARI project will be implemented in the states of Andhra Pradesh, Bihar, Gujarat, Maharashtra, Rajasthan and West Bengal.

WORLD FOOD PROGRAMME

World Food Programme (WFP) extends food aid for supplementary nutrition to the children below six years, pregnant women and nursing mothers under the 'Project 2206'. A total of 21.20 lakh beneficiaries (19.08 lakh pre-school children and 2.12 lakh mothers) in the states of Assam, Kerala, Madhya Pradesh, Rajasthan and Uttar Pradesh are covered. The plan of operation for WFP Expansion Phase V between the Government of India and the World Food Programme was been signed on Nineth November, 1989, for two years (for the same number of beneficiaries), beginning from First October, 1990. Under the Expansion Phase V, WFP will supply 83,963 Metric Tonnes of Soya Fortified Bulger Wheat, 17,954 MT of Corn Soya Blend and 12,501 MT of edible oil. In this Expansion Phase V, the World Food Programme will also extend assistance for two innovative pilot schemes namely construction of buildings of 660 Anganwadi Centres and Training and involvement of adolescent girls in ICDS activities in Madhya Pradesh.

BALSEVIKA TRAINING PROGRAMME

Balsevika Training Programme became operational in 1961-62 to meet the requirements for trained personnel for institutions implementing welfare programmes for children. Balsevika is a multi-purpose field-level worker. She is trained to have a close understanding of the basic needs of the child. The Balsevika Training Course is of 11 months duration, conducted through Indian Council for Child Welfare (ICCW) with 100 per cent assistance from the Department of Women and Child Development. There are 25 Balsevika Training Centres in the country and the annual turn-out is 50 Balsevikas Per Centre. It is proposed to use these Balsevikas Training Centres for the training of Anganwadi Workers.

TOY BANK

"Toy Bank" Scheme was launched all over the country on the Universal Children Day, 14 November, 1986. Under the scheme, toys are collected in schools from children and redistributed among Anganwadis/ Balwadis/ creches/day care centres, etc.

NATIONAL AWARDS FOR CHILD WELFARE

The Scheme of National Awards for Child Welfare was instituted in 1979, the International Year of the Child, as a state's recognition for voluntary action in the cause of child welfare. Presently, five awards are given to institutions and three to individuals annually for the best work done in the field of child welfare. The award carries a cash prize of Rs 2 lakh and a citation for the awardee institution and Rs 30,000 in cash and a citation for an individual awardee.

UNITED NATION'S CHILDREN'S FUND (UNICEF)

The Department of Women and Child Development is a nodal department for UNICEF assistance for the country. India has been associated with UNICEF since 1949. UNICEF's assistance is available for various programmes like the Integrated Child Development Services, urban basic services, women's development, health, nutrition, education, water supply and sanitation. These activities have their focus on children and mothers. The present cycle of cooperation with UNICEF began in 1985 for 1985-89-Master Plan of Operation (MPO). The year 1990 is being treated as

"Bridging Year". The next MPO would cover 1991-95. In that, UNICEF assistance of the order of US $ 175 million from UNICEF's general resources and US $ 290 million from supplementary resources are likely to be available to India.

WOMEN'S DEVELOPMENT BUREAU

The Women's Development Bureau of the Department of Women and Child Development is responsible for the welfare and development of women in the country. The activities of the bureau include formulation of policies, plans and programmes, enacting/ implementing various social legislations relating to women and implementing certain welfare and development programmes for the women. Some of the important achievements in the field of women's development and welfare are:

LEGISLATIVE MEASURES

The Supperession of Immoral Traffic in Women and Girls Act, 1956, which was amended in 1978 was again amended in 1986 in order to make the provisions of the act more effective and stringent and also to extend the scope of the act to cover all persons whether male or female, who are exploited sexually for commercial purposes. The act is now called the Immoral Traffic (Prevention) Act, 1956.

The Dowry Prohibition Act, 1961, was amended in 1984 and again in 1986 in order to make the offence cognizable, to enhance penalty of both fine and imprisonment and to widen the scope of the act to make it more effective.

The Indecent Representation of Women (Prohibition) Act, 1986, seeks to prevent indecent display of women through advertisements, books, posters, etc.

The Commission of Sati (Prevention) Act, 1987, was a landmark legislation to prohibit commission of Sati. It provides for more effective prevention of the commission of sati and its glorification. Punishment of any act of glorification of Sati is imprisonment or a term which shall not be less than one year but which may extend to seven years and with a fine which shall not be less than Rs 5,000 but which may extend to Rs 30,000.

Criminal Laws, namely, the Indian Evidence Act, the Indian Penal Code and the Criminal Procedure Code were amended to make penal provisions against the offence of rape and other such crimes against women more stringent and also to make a new provision in the Indian Penal Code to make cruelty against women by husband and other relations punishable. The onus of proof of innocence in such cases would rest on the accused. Consequential amendments arising out of the Dowry Prohibition (Amendment) Act, 1986, were carried out in Cr. P.C. and the Indian Evidence Act. A new offence 'Dowry Death' has also been included in the Indian Penal Code.

Some of the important programmes implemented by the Department of Woman and Child Development are:

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WOMEN'S DEVELOPMENT CORPORATION

The scheme for setting up of Women's Development Corporations (WDCs) in states and union territories was formulated and implemented from the Seventh Plan onwards. Identification of women as individuals or in groups, preparation of viable projects facilitating training and marketing, etc, are some of the functions envisaged to be carried out by these corporations. The corporations would act as catalytic agents for income generating activities for women. At present, the Women's Development Corporations have been set up in the states/union territories of Kerala, Maharashtra, Chandigarh, Punjab, Tamil Nadu, Karnataka, Andhra Pradesh, Uttar Pradesh, Gujarat, Manipur and Madhya Pradesh. It is proposed that by the end of the Eighth Plan, 25 such corporations will be set up. Financial provision for 1990-91 is Rs one crore (for 12 WDCs).

HOSTELS FOR WORKING WOMEN

To provide cheap and safe accommodation for working women belonging to the low-income group, a scheme of construction/expansion of hostel buildings was started in 1972. The scheme was modified in 1980 to provide assistance for day-care centre for children attached to working women's hostels. It provides assistance to voluntary organisations to the extent of 50 per cent of the cost of land and 75 per cent of the cost of construction of buildings. Assistance is also admissible for purchase of ready-built buildings. Working women drawing consolidated emoluments upto Rs 2,500 per month are eligible for accommodation in hostels. Income ceiling has been raised to Rs 3000 in the case of Mertopolitan and Class 'A' cities. A resident can stay in a hostel for a period of three years, extendable up to five years. During Seventh Five-Year Plan, 221 working women hostels were sanctioned benefitting 13,825 working women. So far, 560 hostels have been sanctioned to provide accommodation to 35,785 working women with day-care centre facilities for 4,865 children in 186 hostels. Eighth Plan envisages setting up of additional 1,000 hostels for 35,000 working women. In 1990-91, it is proposed to construct 70 new hostels to accommodate 3,600 beneficiaries.

EMPLOYMENT-CUM-INCOME GENERATING PRODUCTION UNITS FOR WOMEN

This NORAD (Norwegian Agency for International Development) assisted scheme known as Employment-cum-Income Generating Production Units For Women started functioning from 1982-83 with assistance of NOK (Norwegian Kroner) 20.6 million (approx. Rs 3 crore) for the period 1983-86. Afterwards NOK 40 million were given upto 1990. Under the scheme, funds are made available for various employment-cum-training programmes in non-traditional trades. The programme is implemented through the public sector undertakings, corporations/autonomous bodies/ voluntary organisations. The organisations are assisted to organise training courses and give employment to trained women on sustained basis. Since the beginning of this scheme, assistance has been given for starting 169 projects covering 15,156 women. NORAD assistance for this programme is likely to continue beyond 1990 also.

TRAINING CENTRES FOR REHABILITATION OF WOMEN IN DISTRESS

The scheme for Rehabilitation of Women in Distress (for widows, unmarried mothers and victims of kidnapping, etc., was launched in 1977. Under the scheme, training is provided on residential and non-residential basis both in traditional and non-traditional trades for not more than a year. The scheme is implemented through voluntary organizations which are given 90 per cent assistance, shared equally by the Central and state governments. Voluntary agencies registered as societies/trusts, district rural devlopment agencies, panchayat and other local bodies are eligible for assistance under this scheme. During Seventh Five-Year Plan, 14,310 women were given training in traditional and non-traditional trades. In all, 606 training courses benefitting about 21,000 women have been sanctioned so far.

SHORT-STAY HOMES FOR WOMEN AND GIRLS

The Government is giving grant-in-aid to voluntary organizations for establishing and running short-stay homes. Idea behind this scheme is to protect and rehabilitate those women and girls facing social and moral danger due to family problems, mental strain, social ostracism, exploitation or other causes which may leave her in a situation where she is exposed to any kind of danger. The services provided under the scheme include: i) medical care ii) Psychiatric Treatment iii) case work services iv) occupational therapy v) social facilities for adjustments and vi) educational, vocational and recreational activities. During the Seventh Five-Year Plan, 43 homes were sanctioned. At present, about 70 homes are running. Each home have on an average of 20 residents at a time with facilities for a minimum of 15 and a maximum of 30 residents.

EDUCATION WORK FOR PREVENTION OF ATROCITIES AGAINST WOMEN

Considering the increasing number of instances of offences against women especially rape, molestation, dowry, violence, wife-beating, eve-teasing, etc, financial assistance is provided to voluntary agencies and educational institutes under the scheme of social upliftment of women. Education work such as production and publication of educative material including depicting the theme of violence against women, production of short plays, short stories, poems and creative efforts, dissemination of information or material in the form of films/ books and other materials in regional languages and all activities connected therewith are brought out also.

During 1989-91, 61 voluntary organizations have been assisted under the programme. Projects undertaken by these organisations include-holding of seminars on women and violence, Dowry Prohibition act 1961 and Immoral Traffic (Prevention) Act, 1956, organizing women's groups for prevention of crimes against women, legal literacy camps, camps for social workers training, para-legal staff, etc, plays, yatras and slide shows etc. Universities and other educational institutions are encouraged to take up extension and out-rich activities for helping women belonging to vulnerable social economic sectors.

SUPPORT TO TRAINING-CUM-EMPLOYMENT PROGRAMME (STEP)

Support to Training-cum-Employment Programme was launched in the Central Sector in 1986-87. It consists of a series of action projects' intended to strengthen and improve women's work and employment in the core sectors of Agriculture, Animal Husbandary, Diarying, Fisheries, Handloom, Khadi and Village Industries, Sericulture, etc.

OPPORTUNITIES FOR EDUCATION FOR ADULT WOMEN

The Central Social Welfare Board launched in 1958 a scheme entitled 'Opportunities for Education for Adult women' with the aim of creating band competent trained workers such as primary school teachers, Bal Sevikas, Dais, health workers and midwives, family planning workers, particularly in rural areas and also for opening of new vistas of employment to needy women. Under this scheme, women in the age gruup of 18-30 years, who have some schooling, are coached for two-three years for enabling them to appear at different levels of examinations like middle school, secondary school, matriculation, etc. The component of vocational training was added to this programme during 1975 with the aim of enabling the women in the above age group to take up some employment or self-employment after obtaining one year's training (or training of a lesser period) for some selected vocations. In general, three types of courses-residential, non-residential and mixed are conducted by the voluntary organisations with grant from CSWB on matching basis in the batch of 25 women. The benefits would accrue to the destitute, widowed, deserted, economically backward women living in rural, hilly and tribal areas and urban slums.

The programme has since been revised with the objectives of providing educational qualifications and relevant schemes of women to enable them to become eligible for identifiable remunerative work opportunities, facilitating their empowerment and social activism. Since the inception of the scheme, about 15,230 courses benefitting nearly 3,37,000 women have been sanctioned till the end of the Seventh Plan. About 1,000 courses are expected to be conducted under this programme during 1990-91

SOCIO-ECONOMIC PROGRAMME

This socio-economic programme is also implemented by the Central Social Welfare Board with the objective of providing needy women including economically backward, the destitute, the widowed, the deserted, etc, as also physically handicapped persons with the opportunities for work and wages. Beginning on a modest scale in 1958, the programme has become one of the important programmes of the board for the socio-economic betterment of needy, poor women and the disabled.

Under this programme, financial assistance is provided to voluntary organisations to take up a wide-variety of income generating activities by the target group of needy women. For the implementation of this programme, the board avails the technical assistance of the organisations such as the Small Industries Service Institutes, All India Handloom and Handicrafts, Boards, Khadi and Village Industries Commission, The State Governments Departments of Industries, etc.

2,771 units of different types yielding employment opportunities to over 34,000 needy women and the disabled persons were provided during the Seventh Plan Period. The financial provision for 1990-91 is Rs 4 crore for the programme and 600 units are targetted to be assisted.

FINANCIAL ASSISTANCE TO CENTRAL SOCIAL WELFARE BOARD.

The Department of Women and Child Development gives financial assistance to the Central Social Welfare Board for its multi-faced programme which provides financial assistance to voluntary organisations for rendering welfare services to women, children and the infirm, handicapped and the like through various programmes such as annual grants, Mahila Mandals, holiday camps, welfare extension projects, border area projects, working women's hostels, family counselling, etc. In addition, it encompasses activities like field counselling and inspection, evaluation and statistics, construction of complexes and staff quarters, strengthening of State Social Welfare Advisory Board, etc.

AWARENESS GENERATION PROJECTS FOR RURAL AND POOR WOMEN

This Awareness Generation Projects for Rural and Poor Women Programme which was introduced as conversion and revision of the erstwhile programme of 'Training of rural women in Public Cooperation', has had a rapid upward stride since its inception in 1986-87. It aims at inculcating a spirit of organised activity among rural women for identifying their felt-needs and problems and for chalking-out plans of action to meet the challenges. The revisions made in the programme have been need based including in the subjects like environment, laws pertaining to women and science and technology. During the Seventh Five-Year Plan, 2094 camps were organised. In 1990-91, about 700 camps are proposed to be organised under the programme.

OTHER DEVELOPMENTS

NATIONAL PRESPECTIVE PLAN FOR WOMEN

The National Perspective Plan (NPP) for Women, 1988-2000 A.D., has been prepared. The recommendations of the NPP are aimed at preparing a long-term overall policy for Indian Women guided by the principles and directives relevant to the development process. Action has been intiated to implement the recommendations of the NPP.

NATIONAL COMMISSION FOR WOMEN

The Government has decided to set-up a National Commission for Women to ensure due representation of women in all spheres to check discrimination against women and for redressal of their grievances. The main task of the Commission shall be to study and monitor all matters relating to the constitution and legal safeguards provided for women, to review the existing legislations concerning women and suggest amendments, wherever necessary. *It will also look into the complaints and take Suo Moto Notice and action on the cases involving deprivation of the rights of women. The National Commission for Women Act, 1990, has become a part of the Statute Book. The commission is in the process of being set-up.*

NATIONAL COMMISSION ON SELF-EMPLOYED WOMEN

The National Commission on Self-employed Women headed by Smt. Ela R.Bhatt was set up by the Government of India to make a comprehensive study of the working and living conditions of poor women. The commission presented its report titled, "Shram Shakti" in July 1988. The commission has put together in the report issues concerning working women, examining the existing issues and mechanisms and made detailed recommendations for improving the status of women in the informal sector. The recommendations are being pursued.

NATIONAL RESOURCE CENTRE FOR WOMEN

The National Resource Centre for Women is in the process of being set up to meet the long-felt need for an apex body at the National Level to extend facilities for training, research and information services to all those working in the area of women development.

NATIONAL COMMITTEE ON WOMEN

A 29-member National Committee on Women headed by the Prime

Minister was reconstituted in February 1988. The members of the committee include women activists, state ministers, MPs, journalists, lawyers, social workers and representatives of media, academics and women's organisations.

MONITORING

The Monitoring Unit set up by the Department continued monitoring of the 27 beneficiaries-oriented schemes for women identified by the Prime Minister's Office. The unit also engaged itself in monitoring the progress of Point 12-'Equality for Women' of the 20 Point Programme- 1986. Steps have also been initiated to develop an information system of women in India in close collaboration with the National Informatic Centre. Attempts are being made to collect more gender base data in the ensuing 1991 Census.

INFORMATION AND MASS EDUCATION

The Information and Mass Education Cell of the Department of Women and Child Development continued its activities of public awareness about social problems and subsequent efforts to bring about desired behavioural changes to be achieved through use of mass media including electronic, print, traditional media and outdoor publicity, voluntary organisations and institutions engaged in the women and child development; utilising outlets of Information and Broadcasting Ministry, etc.

SAARC YEAR OF THE GIRL CHILD

The Government of India is observing 1990-91 as the SAARC Year of the Girl Child. Plan of action for observing this includes action research programmes in the seven core areas of: i) education and literacy, ii) socialisation, iii) age of marriage and child mothers, iv) health, nutrition and diet, v) child labour, vi) amniocentesis, female infanticide, and vii) child abuse and atrocities against the girl child, as also use of advocacy of media and other advocacy publicity to generate awareness in the societies to bring about the attitudinal changes towards the girl child.

The following tabulation indicate the outlays and expenditure of the department during the Seventh Five-Year Plan.

(Rs. in crore)

Seventh Plan Outlay	Expenditure	Plan Outlay 1990-91
740.62	958.33	329.60

The entire Women and Child Development strategy is one of giving a new dignity and confidence and a sense of freedom to women and providing integrated package of development and welfare services for the holistic child and women development.

WELFARE OF THE DISABLED

The number of disabled people in the country has been estimated to be around 120 lakh by the National Sample Survey Organisation. The Ministry is implementing programmes for early detection and treatment, education, training and rehabilitation of disabled persons, namely, visually impaired, speech and hearing handicapped, orthopaedically handicapped, mentally handicapped, spastics and leprosy cured persons. Four National Institutes, one for each category of disabled, have been set up for education, training, vocational guidance, counselling, rehabilitation, research and training in various areas of disability. These institutions are the National Institute for the Visually Handicapped at Dehradun, National Institute for the Orthopaedically Handicapped at Calcutta and the National Institute for Mentally Handicapped at Hyderabad. Besides, the National Institute for the Rehabilitation, Training and Research at Olatpur (Cuttack) and the Institute for the Physically Handicapped at New Delhi also implement various programmes. Artificial Limbs Manufacturing Corporation at Kanpur manufactures aids and appliances for the handicapped.

VISUALLY IMPAIRED

The National Institute for the Visually Handicapped is an apex organisation in training, reasearch, vocational guidance, counselling, rehabilitation and development of suitable services for blind persons. This institute also serves as a premier documentation and information centre for visually handicapped. It has a model school for blind children, a school for partially-sighted children, a training centre for adult blind, a workshop for the manufacture of Braille Appliances, a 'sheltered workshop' and a Central Braille Press. The institute also organises training courses for teachers of visually handicapped at regional training centres, namely, Delhi, Patna, Bombay, Calcutta and Hyderabad. A regional centre for south zone has been set up in Madras.

SPEECH AND HEARING HANDICAPPED

Ali Yavar Jung National Institute for the Hearing Handicapped at Bombay was established in August 1982 with the objective of providing integrated services at the National Level for education, training and research for hearing handicapped. The institute runs training courses for deaf at its headquarters in Bombay and also at its regional training centres at Calcutta, New Delhi, Hyderabad and Bhubaneswer. Besides, the training centre for adult deaf at Hyderabad under the institute provides educational and vocational training to partially deaf. Various audio, visual and print materials have been developed for creation of awareness, early detection, prevention and training of parents. There are, at present, 300 schools for the deaf, more such schools are proposed in the Eighth Plan.

MENTALLY HANDICAPPED

Of the 68.5 crore population of the country (1981 census), roughly two per cent are suffering from mental retardation, most of them in rural areas. There are 286 special schools and centres for mentally retarded in the country, a maximum of 61 in Karnataka followed by 51 in Maharashtra and 36 in Kerala.

The National Institute for Mentally Handicapped, (NIMH), Secunderabad, is one of the premier organisations set up in 1984 by the Government to undertake research, training and rehabilitation of mentally handicapped. With a view to arousing mass awareness on the stupendous problem of mental retardation, NIMH is engaged in development of material to cater to both urban and rural audience which aims at educating parents of mentally handicapped and the community as a whole. This campaign includes prevention of mental retardation, early detection and training of mentally retarded persons, besides, creating positive attitude towards mental retardation and removal of misconceptions. It also highlights the need for referral services to organisations providing systematic training and education to mentally retarded. To achieve these objectives, NIMH is engaged in producing literature and audio-visual material in Hindi, English and major languages of the country, suitable even for neo-literates as well as illiterates. The institute runs a Bachelor's Degree Course in mental retardation at Secunderabad and training courses for special teachers for mentally retardation at Bombay, Calcutta and New Delhi. It also runs a model school for mentally deficient children at New Delhi.

ORTHOPAEDICALLY HANDICAPPED

The National Institute for the Orthopaedically Handicapped, Calcutta, was set up in 1982 with the objective of underataking research and training of personnel for rehabilitation of orthopaedically handicapped persons. Other objectives of the institute include rendering services to orthopaedically handicapped, developing appropriate service modules, promoting and manufacturing orthoptic and prosthetic aids and appliances.

OTHER INSTITUTES

The Institute for the Physically Handicapped at New Delhi, besides running a special school and a workshop for orthopaedically handicapped, trains Physiotherapists and Occupational Therapists. The institute has started degree courses in Physiotherapy and Occupational Therapy, National Institute of Prosthetic and Orthotic Training at Olatpur in Orissa meets growing demand of trained personnel in Prosthetics and Orthoptics, Physiotherapy and Occupational Therapy and renders comprehensive rehabilitation services to orthopaedically handicapped. Several camps are organised in tribal and rural areas.

SCHOLARSHIPS

Scholarships are awarded to visually handicapped and speech, hearing and orthopaedically handicapped students for general education and for technical and professional training. About 30,000 scholarships were awarded to disabled students during 1989-90. The scheme is being implemented through state governments/union territory administrations. During 1989-90, Rs 393.63 lakh were provided to states/UTs under this scheme.

SUPPLY OF AIDS AND APPLIANCES

Under the scheme of assistance for purchase and fitting of aids and appliances launched during International Year of the Disabled, aids and appliances costing between Rs 25 and Rs 3,600 are provided free of cost to the persons whose income is between Rs 1,200 and Rs 2,500. During 1989-90, grants-in-aid of Rs 441 lakh were provided to 64 implementing agencies recognised for the purpose to cover about 50,000 beneficiaries.

ASSISTANCE TO VOLUNTARY ORGANISATIONS

Financial assistance upto 90 per cent of the total cost of projects is being extended to voluntary organisations for providing welfare services for disabled. About 227 implementing organisations were given grants-in-aid amounting to Rs 464.30 lakh during 1989-90.

REHABILITATION CENTRES

A scheme for setting-up of District Rehabilitation Centres (DRC) on a pilot basis was launched by the Government in 1983-84. The scheme envisages comprehensive services for prevention and early detection of disabilities and economic rehabilitation of disabled within the community. It predominantly benefits rural disabled. Eleven DRCs, one each in Orissa, Maharashtra, West Bengal, Karnataka, Tamil Nadu, Haryana, Rajasthan, Madhya Pradesh, Andhra Pradesh two in Uttar Pradesh, have so far been established. Under this scheme, a National Information and Documentation Centre on Disabilities and a Rehabilitation Technology Centre for development of aids and appliances, have also been established at Delhi. Rehabilitation Council, an apex body to enforce uniform standards and training of professionals, has also been set up as an authonomous body.

SCIENCE AND TECHNOLOGY PROJECT

The Government has set up a 'science and technology project' for *application of technology for the welfare and rehabilitation of the handicapped.* Objectives of the project are to coordinate, fund and direct application of technology in development and utilisation of suitable and cost-effective aids. Also, appliances and methods of education and skill development are to be improved which would enhance opportunities for employment, easier living and mobility, communication, recreation and integration in society.

SPECIAL EMPLOYMENT EXCHANGES FOR THE HANDICAPPED

Special Employment Exchanges and Special Cells in normal Employment Exchanges endeavour placement of handicapped in gainful employment. During 1989, 3949 handicapped were placed in jobs through the existing 23 Special Employment Exchanges, 42 Special Cells in normal Employment Exchanges and other General Employment Exchanges. Under the Central Scheme of Employment of the Handicapped, cent per cent assistance is given to states for setting up such Special Cells.

PETROL SUBSIDY SCHEME

Fifty per cent of the cost of petrol/diesel purchased by the handicapped owners of motorised vehicles, subject to certain ceilings, is reimbursed to all handicapped persons whose income is less than Rs 2,500 per month. The scheme is being implemented by states/UTs with the Central Government providing cent per cent assistance.

NATIONAL AWARDS

Every year, the President presents National Awards to outstanding employers of handicapped and most efficient handicapped employees/self-employed persons from Government and private sectors, local bodies, public sector undertakings, corporations and placement officers of the handicapped. Award to handicapped employees comprises a citation, a certificate, a medal and cash prize of Rs 1,000. Employers are given a citation and a shield and placement officers are given a citation, a shield and a certificate. The National Award for the best work done in the year for disabled was instituted in 1983 as a state recognition of voluntary action for the cause of the disabled. It consists of a citation, a certificate and a cash prize of Rs 20,000 to an individual and Rs one lakh to an institution. From 1988, a National Technology Award for best technological invention for the handicapped has also been introduced.

RESERVATION IN SERVICES

To encourage employment of handicapped, three per cent of group C and D posts are reserved in Central Services and public sector undertakings for physically handicapped. Age concession upto ten years and relaxation in medical standards is available for the Central Government Services.

FAMILY PENSION FOR LIFE

Family Pension for Life is payable to children of Government Servants suffering from disorder/disability of mind or physically crippled rendering them unable to earn a living, under the Central Civil Services (Pension) Rules, 1972. The benefit is admissible only to such children who are born before or after retirement from marriage that took place before retirement of Government Servants.

NATIONAL HANDICAPPED WELFARE FUND

The Government has set up a National Handicapped Welfare Fund with voluntary contributions from the public sector, private sector and general public. Fund is utilised to augment existing voluntary services for welfare of the handicapped.

SOCIAL DEFENCE

Problems of family and social disorganisation are manifest in the form of delinquency, juvenile vagrancy, drug addiction, alcoholism and crimes of various types, etc. In order to control these problems of personal and social deviance, programmes of social defence have been launched by the state governments mainly within the framework of specific legislations and allied measures.

CHILD PROTECTION

Another programme for providing care and protection to abandoned, neglected and destitute children is in full-swing. Objective of the scheme for welfare of children in need of care and protection is to provide welfare services to destitute children for rehabilitating them as normal citizens. The programme includes ameliorative services of food, shelter, clothing, medical attention, education, pre-vocational and vocational training, etc. The scheme began in 1974-75 and is being implemented as a Centrally Sponsored Scheme since 1979-80. Under the scheme, financial assistance is provided to voluntary organisations for maintenance of children, purchase of furniture, utensils, voluntary training equipment, etc., and for construction of cottages for destitute children. Ninety per cent of the expenditure is shared by the Central and State Governments equally, whereas ten per cent is to be borne by the voluntary organisations. Grants are disbursed to voluntary organisations by the states which are responsible for monitoring of the scheme and initially recommending cases for bringing such organisations within the ambit of the scheme. Presently, 44,492 children have been covered under the scheme through nearly 900 voluntary organisations. Budget Provision in 1990-91 was Rs 400 lakh as against Rs 360 lakh in 1989-90.

JUVENILE JUSTICE ADMINISTRATION

With a view to providing a uniform pattern of justice to Juveniles throughout the country, the Juvenile Justice Act. 1986, was enacted by Parliament in December, 1986, replacing Children's Acts in various states/UTs. This act came into force from 2 October, 1987, throughout the country except Jammu and Kashmir. It provides for care, protection, treatment, development and rehabilitation of neglected or delinquent juveniles and adjudication of certain matters relating to, and disposition of, Delinquent Juveniles. The act is a major step in administration of Juvenile Justice with accent on wholesome growth and social reintegration of various categories of socially maladjusted children. It lays down a uniform legal framework so as to ensure that no child under any circumstances is lodged in jail or police lock-up. Juvenile Welfare Boards and Juvenile Courts have been established to provide for specialised approach towards neglected and Delinquent Juveniles respectively. During the pendency of any inquiry regarding the Juvenile, he shall, unless he is kept with his parents or guardians, be sent to an 'observation home' or a place of safety. After the inquiry is complete (in case institutionalisation is considered necessary), Neglected and Delinquent Juveniles shall be lodged in 'Juvenile Homes' and 'Special Homes' respectively. This act represents a blueprint for fair, equitable and just treatment of Juveniles with due emphasis on the rights of child.

In order to effectively implement this act by establishing and strengthening requisite infrastructure in states/UTs, the Ministry of Welfare is implementing a Centrally-Sponsored Scheme for prevention and control of Juvenile Special Maladjustment since 1986-87. Under this scheme, assistance is provided for setting upgradation of observation homes, juvenile homes, special homes and after-care facilities as well as training of functionaries. Expenditure is shared between Central and State Governments equally. During 1990-91, provision under the scheme was Rs 400 lakh as against Rs 360 lakh in 1989-90.

WELFARE OF PRISONERS

Welfare of prisoners constitutes an important area of social defence. Ministry of Welfare has recently formulated a scheme for welfare of prisoners for providing counselling and guidance to prisoners and setting up of rehabilitation homes for facilitating reintegration of offenders within the community. It is a centrally-sponsored scheme, where expenditure is borne equally by state governments and central government. Objective of the scheme is to identify cases of institutionalised offenders who need prolonged care, protection and assistance in the community, on their release. Under the scheme, financial assistance to states/UTs is given for setting up of rehabilitation homes, counselling and guidance centres and de-addiction centres. Expenditure is shared between central and state governments, voluntary organisations bearing only 10 per cent. In case of tribal areas, respective share of central government, state government and voluntary organisation is in the ratio of 47 1/2 : 47 1/2 :5.

PROBATION SERVICES

Services in this field are being progressively developed within the framework of the Probation of Offenders Act, 1958. The act contains systematic provisions for probation in respect of various categories of offenders under specified circumstances. It lays down special stress on use of probation in lieu of imprisonment for youthful offenders below 21. Probation officers, as appointed under the act, conduct social investigation of offenders for consideration by courts. They also supervise cases as are placed under them. Side by side, voluntary organisations provide financial and other assistance to those released on probation.

BEGGARY PREVENTION

Apart from provisions of substantive law against kidnapping, abduction and maiming of children for purposes of begging, 15 states and two union territories have implemented special laws against begging. Besides, municipal and police acts also provide for measures against begging. Some state governments have taken steps for provision of training and employment facilities for beggars.

NATIONAL INSTITUTE OF SOCIAL DEFENCE

National Institute of Social Defence functions as Central advisory body for coordination, standardisation and development of social defence programmes in the country. To achieve this, the institute undertakes research on social defence, compiles and analyses statistics on the subject, promotes training orientation and helps draft model legislation and rules in the field of social defence. It also advises state governments and union territory administrations on various aspects of social defence development.

PROHIBITION AND DRUG ABUSE

The Ministry of Welfare deals with the educational and social Welfare aspects of drug addiction. This problem has been receiving the serious attention of the Government in recent years as it is a problem which is no longer rstricted to any particular economic or social strata of society but has infiltrated everywhere. A piquant situation has arisen where the individual, the family and the entire fabric of society is threatened with disintegration. Drug abuse is a multi-faceted, multi-dimensional problem having sociological, medical, psychological, cultural, geographical, etc. dimensions to it. Therefore, to deal with this problem, an integrated and concerted approach has been adopted by involving voluntary organisations following a community based approach. The Welfare Ministry tackles the demand reduction efforts through a 2-pronged strategy (a) by spreading awareness about the ill-effects of drug abuse; and (b) by providing counselling, de-addiction, after-care and rehabilitation services for those who have become victims of addiction. So far, 108 Counselling Centres, 36 de-addiction centres and 8 after-care centres have been funded by the Government of India for provision of services. In addition 23 voluntary organisations have been funded for awareness building through voluntary organisations, who make use of the face to face communication methodology such as arrangement of pantomine shows, street plays, debate, film shows, seminars, street-corner meetings etc. The Government, in addition, has also been utilising the electronic and the print media for reaching-out the people at large. A poster competition was orgnised on an all India basis and the 10 posters found best were printed for wide-distribution. In addition to this, hand-bills were distributed through newspapers. A 10-minutes weekly programme 'Aao Haath Badhayen' is broadcast through 29 channels of AIR. Both the drug abuse and alcoholism prevention are an important subject dealt with through this programme. In the North-east region, a great thrust has been given to the programme. 500 wall-paintings and 500 hoardings were displayed in this region.

Acticle 47 of the Constitution enjoins that the state shall endeavour to bring about prohibition except for medicinal purposes, of intoxicating drinks and drugs which are injurious to health. Responsibility for fulfilling the constitutional obligation in regard to prohibition rests largely with the state governments. Government of India has however been continuously making efforts to educate people about ill-effects of drinking through mass media and encouraging voluntary organisation through grants for taking up educative publicity. Voluntary organisations who are being funded for providing services to drug addicts also provide services to those who are affected with alcoholism. A total amount of Rs 445 lakhs was spent for the purpose under the plan.

RELIEF AND REHABILITATION

Rehabilitation schemes cover programmes/schemes for relief and rehabilitation of displaced persons from Pakistan (including those who migrated from former East Pakistan, now Bangladesh), Indian national repatriated from Sri Lanka and Tibetan refugees. The schemes are implemented directly by the Ministry of Home Affairrs as well as through state governments and union territory administrations. Rehabilitation has more or less been completed except of Sri Lankan repatriates and Tibetan refugees.

REHABILITATION SCHEMES/PROGRAMMES

MIGRANTS FROM FORMER EAST PAKISTAN

About 41.17 lakh displaced persons from former East Pakistan, now Bangladesh, migrated to India from 1947 to 31st March, 1958. Of these, over 31 lakh persons stayed on in West Bengal. A wide-range of rehabilitation measures were undertaken for resettlement of these people during 1948-1961. These included agricultural schemes, vocational, technical training schemes, rehabilitation loans for small traders, businessmen/probessional people and provision of housing, medical and educational facilities.

By 1960-61, rehabilitation of old migrants in states other than West Bengal/was by and large completed. At present, the scheme for acquisition of land in approved squatters' colonies and issue of title deeds is under implementation in West Bengal.

DANDAKARANYA PROJECT

The Dandakaranya Project in Koraput, Orissa was set up in 1958 for rehabilitation of displaced persons from former East Pakistan (now Bangladesh) in Dandakaranya region and for integrated development of the area with particular emphasis on the interests of the local tribal population. As the work relating to the settlement of the displaced persons in the four zones of the Project viz. Kodagaon and Paralkote in Madhya Pradesh and Umerkote and Malkangiri in Orissa had been completed, it was decided to transfer the assets and institutions of these zones to the repectives state governments. Pursuant to this decision, all the assets and institutions created by the Dandakaranya Project in the four zones have already been transferred to the respective state governments during the period 1985-1989. The administration and management of these assets and institutions is now looked after by the respective state governments.

REPATRIATES FROM SRI LANKA

Under the Indo-Sri Lanka Agreement of 1964 and 1974 and subsequent accord of January 1986 the Government agreed to grant Indian Citizenship and accept repatriation of 5.06 lakh persons of Indian origin from Sri Lanka, together with their natural increase. Till the end of October, 1990.1,15,878 families, comprising 4,60,741 persons (3,35,015 accountable and 1,23,732 natural increase) arrived in India from Sri Lanka. Repatriates From Sri Lanka are granted primary rehabilitation/seconday rehabilitation assistance. Primary rehabilitation assistance consists of settlement under various schemes viz. agriculture, small trade/business, plantation, industry, etc. Subsidiary assistance consists of housing and educational facilities.

SRI LANKA REFUGEES

In the wake of ethnic disturbances in Sri Lanka which erupted in July, 1983, 1,34,053 refugees arrived in India from 24th July, 1983 to 30th November, 1987 (Phase-I). Of these, 39,918 destitute refugees were accommodated in various camps in Tamil Nadu where relief facilities aggregating to Rs 700/- per month for a family of 5 members were provided. The remaining refugees preferred to stay outside without seeking any Government assistance. Of the Phase-I arrivals upto October, 1987, 19,581 refugees had returned to Sri Lanka on their own when the illicit movement of boats between India and Sri Lanka was stopped. After the signing of Indo-Sri Lanka Agreement of 29th July, 1987, the process of organised repatriation began on 24th December, 1987 and, thereafter, in 50 batches till 31st March, 1989, 25,585 refugees were returned to Sri Lanka under the arrangements of the Government of India.

Of the Phase-I arrivals, 777 refugees were staying in the two camps at Mandapam and Kottapattu. Out of these, 225 refugees who were in possession of Indian documents have been treated as repatriates and sent out of the camps after granting rehabilitation assistance. The balance 552 refugees are still residing in the camps in Tamil Nadu. These refugees have either filed writ petitions in various courts against their repatriation back to Sri Lanka or fall under the Stateless category. The question of sending them back to Sri Lanka or treating them as repatriates is under consideration of the Ministry of External Affairs. Thus, of the Phase-I arrivals as on date, 88,662 refugees are staying in India. Of these, 552 are staying in camps and the balance 88,110 are staying outside the camps.

As a result of renewed violence in Phase-II, 1,21.611 refugees have arrived in Tamil Nadu from Sri Lanka between 26th August, 1989 and 26th November, 1990. There has been large scale influx of refugees during July and August, 1990 after the out-break of armed conflict between the Sri Lankan Army and the LTTE. Of the Phase-II arrivals, 1,16,001 refugees have also been admitted in two permanent camps at Mandapam and Kottapattu and in temporary camps/relief centres, etc. spread over eighteen districts in Tamil Nadu. The remaining refugees have not sought admission in the camps. Thus, as on 26.11.90, 2.10,273 refugees (88,662 of Phase-I arrivals and 1,21,611 of Phase-II arrivals) were staying in various camps in the state as on 26.11.89 were 1,16,553 (552 of Phase-I arrivals and 1,16,001 of Phase-II arrivals) 1614 Sri Lankan Tamil refugees were also brought to Malkangiri Sub-Division of Koraput District in Orissa. Now 295 refugees are residing in the camps at Malkangiri.

Refugees on arrival at Rameswaram Port, go through necessary custom checks and thereafter they are screened for registration. Adequate medical and other facilities are available at the Port provided food, etc. till they are shifted to the refugee camps. In the camps, these refugees are being provided relief facilities, aggregating to about Rs 1,000/- per month for a family of five members which inludes cash doles, clothings, subsidized rations etc. Adequate drinking water, sanitation and medical facilities are available in the various camps. In the permanent camps like Mandapam, Banking facilities, educational facilities and fair price shops are also available. Adequate security arrangements have been made in the permanent camps as also in the temporary camps/shelters. Since July, 1983 till September, 1990, Rs 22.20 crore has been incurred on providing relief facilities and for carrying out various construction works in camps in Tamil Nadu. Apart from this, an amount of Rs 20 lakh has also been relased to the Government of Orissa for meeting expenditure on providing relief facilities and for carrying out various works in the camps in Malkangiri, District Koraput. The state governments are the implementing agencies and the entire cost on relief and accommodation is being borne in full by the government of India. With a view to providing security and relief within that country the Government of Sri Lanka has also been requested by the Ministry of External Affairs to set up refugees camps in Sri Lanka under international supervision.

TIBETAN REFUGEES

At present, there are about 80,000 Tibetan refugees in India. Of these 68,248 refugees have been setted either through self-employment or with Government's assistance under agricultural and handicrafts schemes. Further, as a result of screening, 1029 families have been found eligible for grant of rehabilitation assistance.

PENSION AND PENSIONER'S WELFARE

The department of Pension and Pensioners' Welfare was set up in March 1985. Its responsibilities include formulation of policy and coordination of matters relating to the retirement benefits of all Central government employees. The department has also provided the much needed thrust towards having an integrated approach to matters relating to post-retirement benefits with a view to attracting not only the best talent available to civil services but also to ensure retention in services with a view to making services an effective engine for social and economic changes for the betterment of people.

In pursesuance of these objectives, a revised integrated pension structure was introduced on 1 January 1986 based on the recommendations of the Fourth Central Pay Commission. Pension for full qualifying service of 33 years is now uniformly calculated at, 50 per cent of average emoluments drawn during ten months preceding the retirement. Benefit of the revised formula has also been extended to pre-1 January 1986 retires and their pensions have also been substantially improved upon. Minimum pension/family pension is now Rs 375 per month. Pension structure for pre-1

January 1986 retires as well as those retiring on or after 1 January 1986 is now linked to average Consumer Price Index 608 (1960 as base) and a rational system for grant of relief against inflation beyond CPI 608 has been introduced. Provisions relating to retirement gratuity/death gratuity and family pension have also been substantially improved upon. These steps have resulted in the simplification of pension procedures.

Procedure for sanction and disbursement of pension has been streamlined. Central Pension Accounting Office (CPAO) has been set up from 1 January 1990. It now commences 24 to 30 months in advance of one's date of retirement to ensure that retirement benefits become payable from the very date of retirement. Passage through which pension documents are transmitted to pension disbursing authority have been simplified. Direct link has now been establised between nominated accounts offices and link branches of public sector banks for speedier transmission of pension documents. Revised procedure eliminates a number of intermediate agencies which were responsible for delays in the past. Format of the pension payment order has also been revised to indicate full particulars of service which go into the calculation of retirement benefits. Pension payment order also includes detail regarding family pension payable in the event of the death of the pensioner. Based on these details, payment of family pension is commenced by disbursing officer without requiring fresh sanctions from administrative authorities.

The Department of Pension and Pensioners' Welfare also plays an important role in the redressal of pensioners' grievances. Pensioners' grievances received in this department are taken up with the respective departments for being looked into and for taking such remedial action as is considered appropriate in each case. Qualified officers in this department also attend to pensioners' grievances in-person. The time between 4 to 5 p.m. has been set apart daily in the department when pensioners can come and meet the concerned officer without any prior appointment. 'Pension Adalats' are also held regularly by the Ministry of Railways, Department of Posts, Department of Telecommunication and Ministry of Defence, where there is a large concentration of Central Government pensioners. Attempts are made to sort out pensioners' grievances on the spot in these adalats. Pension was granted to 1,55,799 freedom fighters till February 1990 and 281 cases were pending. Of these, the 30 cases having special features were pending for want of reports from the state governments besides 251 under scrutiny by the committee for Arya Samaj Movement.

11 Mass Communication

IN a country like ours, mass communication plays a vital role in creating people's awareness about policies and programmes of development. It helps in motivating them to be active partners in Nation-building endeavour. A skillful synthesis between Traditional and Folk Forms of Communication on one hand and Modern Audio-Visual Media including Satellite Communication on the other, is being attempted. The Ministry of Information and Broadcasting being the nodal organisation in this field, it has a comprehensive set-up of its Mass Media Units with their regional and branch offices as well as mobile units.

ELECTRONIC MEDIA

AKASHVANI

Broadcasting started in India in 1927 with two Privately-owned Transmitters at Bombay and Calcutta. The Government took over the transmitters in 1930 and started operating them under the name of Indian Broadcasting Service. It was changed to All India Radio (AIR) in 1936 and it also came to be known as Akashvani since 1957. AIR is serving as an effective medium to inform and educate people besides providing healthy entertainment.

BROADCASTING NETWORK

At the time of Independence, there were Six Radio Stations. All India Radio's Network now comprises 104 Stations excluding the National Channel, the Integrated North-East Service and the External Service. Of these, 29 Stations have a separate channel for Commercial Broadcasting apart from the Primary Channel Broadcast in the regional languages of the area. There are in addition; there Commercial Broadcast Centres at Chandigarh, Kanpur and Vadodra. There are Two Studio Centres at Bhubaneshwar and Shantiniketan. AIR covers 95 per cent of the population.

MUSIC

Music was largely under the patronage of Princely Courts during Pre-Independence Days. With the abolition of the Princely States after 1947, the task of preserving the musical heritage and its propagation was taken over by AIR. Through the regular broadcast of music programmes, AIR has contributed largely to bring about an awareness and appreciation of Indian Music in all its variety—Classical, Light, Folk and Tribal.

About 38 per cent of the total broadcast of AIR now constitutes music programmes. These include Classical and Light Classical Music, Light, Devotional, Folk, Tribal, Film as well as Classical and Light Western music. Besides the regular music programmes, All India Radio started in 1950's some of the major network programmes, namely, the National Programme of Music and the Akashvani Sangeet Sammelan. Later, the National Programme of Regional and Light Music and the zonal hook-up concerts by young artists were added. Through these programmes, AIR brings to its listeners the best of musical talent available in the Country on its network.

AIR also broadcasts music lessons and music appreciation programmes regularly from various AIR Stations. New talent is continuously scouted through the regular music auditions as well as annual music competition. Young and promising artists feature in public concerts through a system of Chain-Booking which enables artist of one region to get exposure in other regions of the Country.

Among the significant achievements of AIR's National Programmes and Sangeet Sammelan Concerts is the integration of Hindustani and Carnatic Styles—the major styles of music. Eminent artists as well as the most promising younger artists in both the styles are presented in these programmes. During Akashvani Sangeet Sammelan, Hindustani Music Concerts are arranged in the Southern Region and Carnatic Music Concerts in the Northern Region.

AIR has set up a Central Music Audition Board and a number of Local Audition Committees for inducting music talents. It also conducts Annual Music Competition for scouting talents.

To develop mass singing as a means of achieving National Integration, 17 Stations have instituted choral groups. As an extension of this programme, promotion of community singing as a movement has now been taken up in a big way. Selected songs with simple text and tunes are being propagated through broadcasts as well as training of teachers and students with the help of National Council of Educational Research and Training and educational institutions.

All the stations of AIR are broadcasting Community Songs 335 times a week. The lessons of such songs are being broadcast 96 times a week by all AIR Stations, National Channel and Vividh Bharati Service of AIR.

Two Major Music Festivals-Thyagaraja and Tansen-are covered by AIR and excerpts are broadcast on the National and Zonal Hook-ups. AIR also releases selections from its Archives which has the most important collection of music records in the Country through Gramophone Records and Cassettes.

Western Music which commands sizeable listening is now being broadcast from 17 Stations, some of them as a part of youth programmes. These programmes bring to the listeners the Western Music Artists of the Country and the best selections of recorded Western Music from all over the World. Whenever such eminent artists from Abroad visit this Country, AIR records their music for its listeners.

Another important milestone in AIR's Music Programmes is the National Orchestra known as AIR Vadya Vrinda in Delhi and Madras. These Orchestral Units comparising both Hindustani and Carnatic Musicians have done remarkable experiments in orchestration of Indian Music under eminent conductors and have wide repertoire of a variety of compositions based on Traditional Ragas and Folk Melodies as well as Thematic Compositions.

Folk Music, a very important part of AIR's Music Programmes, covers about 12 percent of the total music programmes. Folk Music Collection Centres have been set up at 20 Centres to systematically collect and preserve this heritage. AIR also participates in the International Radio Music Festival of Folk Music organised by the Asian Broadcasting Union every year.

VIVIDH BHARATI AND COMMERCIAL SERVICE

Popular Entertainment Programme, Vividh Bharati, is broadcast from 32 Centres including Two Short-Wave Transmitters at Bombay and Madras. The total duration of the programme is 12 hours and 45 minutes on week days and 13 hours and 15 minutes on Sundays and holidays. Film Music, Humorous Skits, Short Plays and Features are presented in these programmes.

Commercial Broadcasting which was introduced in November, 1967, from Bombay-Nagpur-Pune on an experimental basis is now carried by 29 Centres. Advertisements are accepted in any language as Tape-recorded Spots of 7, 10, 15,20 and 30 seconds duration. Sponsored Programmes over the AIR hook-up began in May, 1970.

In April, 1982, Commercials were introduced on a limited experimental scale on the Primary Channel. This was extended from January, 1985 to other categories of programmes from 55 AIR Stations. Spots/sponsorships are being accepted in Rural Programmes, Women's Programmes, Film/ Light Music (Indian and Western) including Listener's Choice, Plays and other Popular Programmes.

PLAYS AND FEATURES

Radio Plays have been extremely popular all over the Country. Most of the Stations Broadcast atleast two plays a week. Besides Original Plays, radio adaptations of outstanding Novels, Short Stories and Stage-plays are also broadcast. Outstanding Plays in Indian Languages are broadcast in the National Programme of Plays which was started in 1956. A series of Monthly Chain-plays is also broadcast. Under this, about 12 Model Plays are produced in a year and circulated among Major Stations. Serial Playlets which projects the current socio-economic issues are broadcast from many Stations on weekly basis. Humorous Plays and Skits are broadcast on the entire network of Vividh Bharati. All India Competition is organised since 1987 for Radio Playwrights. During 1989-90, the competition was organised in 19 Prominent Regional Languages. Three best scripts were selected by the Jury in most of the languages. The scheme has been launched to encourage writers to write specially for Radio.

The National Programme of Features was started in 1956. It focuses attention on matters of National Importance in the political, economic, social and cultural spheres. The original script may be in English or Hindi but is invariably translated into the regional languages and broadcast from all the Regional Stations.

NEWS AND CURRENT AFFAIRS

The history of News Broadcast is much older than that of All India Radio. The First News Bulletin went on the air on 23 July, 1927, from a privately-owned Radio Station at Bombay. The news organisation of All India Radio, however, came into being in August, 1937, when the First News Bulletin was Broadcast from Delhi. By 1939-40, All India Radio was broadcasting 27 Bulletins and its news set-up was called the Central News Organisation which later came to be known as the News Services Division (NSD).

All India Radio at the present juncture is broadcasting 273 Bulletins for a duration of over 37 hours in its Home, External and Regional Services. It has become One of the Biggest News Organisations of its Kind in the World. The News Broadcasts include 78 bulletins in 19 languages in the Home Services from Delhi. Their duration exceeds 11 hours a day. In the Regional Services, 127 Bulletins including three from Delhi, are broadcast daily in about 72 Languages and Dialects for a duration of nearly 17 hours. In the External Services, 68 Bulletins in 25 Languages are put out every day from Delhi, Calcutta and Madras for a duration of over nine hours. Special Bulletins such as Sports News and Slow-speed Bulletins in English and Hindi are also broadcast. A Special Bulletin of Five Minutes Duration is put out daily during the Haj Period for the benefit of Indian Pilgrims. During the Parliament Session, Daily Commentaries in Hindi and English reviewing the day's proceedings of both the Houses are broadcast. Weekly Commentaries in English and Hindi are also put out covering the main developments during the period. Similarly, Daily and Weekly Reviews of State Legislatures are broadcast from the State Capitals in the languages concerned by the Regional News Units. In addition, commentaries from specialists in various fields and scripts from AIR's Correspondents are broadcast in English, Hindi, and Urdu in the programmes, Spotlight, Samayiki and Tabsara respectively. In the Current Affairs Programme every Sunday, specialists in this field take up a live issue of the week for indepth discussion. Eyewitness accounts, interviews with important persons and reactions of the common man to the happenings around him are presented through Radio Newsreel both in English and Hindi.

AIR on third February, 1990, launched a new programme *'News Sameeksha'* comprising listener's comments on its views and Current Affairs Programmes. The programme, the first ever of its kind, throws open News Bulletins and various Current Affairs Programmes of AIR for scrutiny, criticism, comments and suggestions. It is broadcast on the First and the Third Saturday Every Month at 0910 hrs on the National Hook-up.

A major part of the News broadcast comes from AIR Correspondents. It has 101 Full-time Correspondents in the Country. Besides this, AIR Correspondents are stationed at Singapore, Colombo, Dhaka, Dubai, Kathmandu, Harare and Islamabad. AIR also has 232 Part-time Correspondents in India and Abroad. It also subscribes to the News Agencies like PTI, UNI, Bhasha and Univarta. Another source of news is the Monitoring Unit at Ayanagar in Delhi and a Small Unit attached to the General News Room in New Delhi itself. The Two Units together monitor 144 Transmissions Daily from various Foreign Broadcasting Organisations in Nine Foreign and Five Indian Languages.

EXTERNAL SERVICES DIVISION

The External Services of All India Radio broadcasts programmes for 70 hours 45 minutes every day. The broadcasts follow a composite pattern and generally comprises, News Bulletin, Commentary on Current Events and a Review of the Indian Press. Besides this, Newsreels, Magazine Programmes on Sports and Literature, Talks and Discussions on socio-economic, political, historical and cultural subjects, Features on developmental activities and progress on National Life Front, documentaries on important events and institutions, Classicals, Folk and Modern Music of India's Diverse Regions from a major part of total programme output.

General Overseas in English (8 hrs 15 mts) and Urdu Service (12 hrs 15 mts) are the two major services of the External Services Division (ESD). The West Asian Service broadcasts programme in Arabic (3 hrs 15 mts), Dari (1 hrs 45 mts), Persian (1 hr 45 mts), Pushtu (2 hrs) and Baluchi (1 hr). East African Countries are served by the Swahili Service (2 hrs). The French Service (45 mts) is directed to West and North West Africa. Other area oriented services are in Russian (1 hr), Burmese (1 hr 30 mts), Chinese (2 hrs), Indonesian (1 hr), Sinhala (2 hrs), Thai (45 mts), Nepali (3 hrs) and Tibetan Languages (1 hr 45 mts). For Indians Abroad, there are services in Indian Language i.e. Bengali (6 hrs 45 mts), Gujarati (1 hr), Hindi (4 hrs 30 mts), Punjabi (2 hrs), Sindhi (2 hrs 30 mts), Tamil (7 hrs 30 mts), Telugu (30 mts) and Urdu (12 hrs 15 mts). These broadcasts project the Indian Point of View on World Affairs and acquaint the Overseas Listeners with the Developments in India alongwith the information on the myriad facets of Indian Life, Thought, Culture, Tradition and Heritage. *The ESD has assumed the role of a Cultural Ambassador of India to the World at large and is projecting and promoting the Indian image abroad.* The encouraging feedback (about 1200 letters per day) that we get from our listeners in the various services is an eloquent proof of carrying the message of India forcefully across the borders.

In the broadcast of ESD, a quantitative and qualitative change has been brought during 1990. With the withdrawal of the IPKF in Sri Lanka, our service to Sri Lanka was redesigned. A New Composite Programme was initiated consisting of Tamil, English and Sinhala Services. Similarly in order to improve the reception quality of some of the services, Time, Duration and Transmitter Support were realigned. Sindhi Service was made an Integrated Service between 1800 and 2030 hrs IST instead of Three Different Transmissions in the preceeding years (between 1300 and 1400, 1730 and 1830 and 2115 and 2145 hrs IST). Baluchi Service, which was being broadcast from 1830 to 1900 hrs IST increased its total time schedule by 30 mts and its time was also changed to 2030 and 2130 hrs IST. The introduction of 30 mts of Telugu Service between 0415 to 0445 hrs IST fulfilled the long-time dream of Telugu Speaking People of Indian Origin settled in South-East Asia. The broadcast of special messages in Malayalam and Hindi to the Indian stranded in the Gulf Areas and Malayalam News during the "Gulf Crisis" in our Hindi Services was the 'call of the day'.

ESD continues to beam United Nations News to different parts of the Globe on every Saturday.

PROGRAMME JOURNAL

External Services Division publishes a Monthly Programme Journal "India Calling." It also brings out quarterly folders in foreign languages (Nepali, Pushtu, Swahili, Tibetan, Arabic, Burmese, Chinese, Dari, French and Indonesian) to help provide advance information of the programmes broadcast. In addition, the Journal India Calling carries the text of the selected talks already broadcast and other items of listeners interest. The publications are supplied free to overseas listeners.

External Services Division has been India's Authentic Window to the World. Efforts are on to strengthen the signal, introduce Additional Language Services, improve the programme content and also reach new areas.

PROGRAMMES FOR SPECIAL AUDIENCE

The programme for 'Special Audience' include those for the Armed Forces, Women and Children, Youth, Students, Rural and Tribal People and Industrial Workers. Fourteen AIR Stations broadcast daily programmes for the Armed Forces. Programmes for women are broadcast in Regional Lanugages two to six days a week. Two to Seven Programmes for Children are put out.

Thirty three AIR Stations Broadcast Programmes for Industrial Workers. In addition, All India Radio's Dibrugarh, Kurseong and Guwahati Stations Broadcast one to two programmes a week for Tea Garden Workers.

Yuva Vani provides a forum for self-expression to the Youth who constitute a sizeable section of the population. The service is open to persons in the age group of 15-30. AIR Stations Broadcast this programme in varying duration and frequency in Different Languages and different Formats. AIR Delhi, Calcutta, Hyderabad, Jammu and Srinagar Broadcast's these programmes for long hours on a Separate Transmitter under Yuva Vani.

For school students, most of the All India Radio Stations broadcast programmes based on the school curriculum to reach students in the interior areas. Radio support to University Correspondance Degree Courses is also provided by Several Stations. Stations like Shimla, Nagpur and Tiruchi also Broadcast Programmes on Non-formal Education.

All India Radio started Broadcasting Programmes on Family Planning now known as Family Welfare Programmes on a regular basis in the late sixties to provide radio support to the National Family Planning Programme. In the late seventies, the Family Planning Service Delivery System was integrated into health package of service particularly the maternal and child health and nutrition activities and the entire integrated activity was called as Family welfare.

Intensive Family Welfare Broadcasts are made from 36 Stations. Other Stations also put out programmes related to Family Welfare. Particular emphasis is laid on Two Children Norm', 'Spacing Methods', Use of Contraceptives', raising of marriage age', 'Terminal Methods of Family Planning' and 'Women's Education', health protective measures in respect of Immunization, AIDS, Drug Abuse, Goitre Control, Control of Rabies, Epilepsy and Blindness, etc., are highlighted frequently.

RURAL PROGRAMME

Rural Programmes are broadcast from almost all AIR Stations in Regional Languages and Local Dialects. In 1966, AIR set up Farm and Home Units in selected AIR Stations to provide relevant and problem-oriented farm information to the farmers of a small homogenous area with similiarity of agro-climatic conditions. This marked the begining of a New Era of Farm Broadcasting in the Country. More units have been set up since then. Presently; 85 Stations including Five Local Stations have one such unit each. Another ten Local Stations will start operating Farm and Home broadcasts very shortly. Farm and Home Units are to be set up in all the Regional and Local Stations of AIR Network. The main ingredients of Farm and Home Broadcasts are hints on day-to-day agricultural operations, scientific methods of agricultural and livestock farming, Soil and Water Management, fertiliser application, plant protection measures, storage and marketing, etc.

The duration of broadcasts for rural audience from Each Station varies from 21 hours to 45 hours a month. It is broadcast in the morning, evening and noon every day for convenient listening by majority of the rural people.

PROGRAMMES FOR SENIOR CITIZENS

A notable achievement has been the starting of Radio Programmes for Senior Citizens from 17 State Capitals. The programmes feature interesting items of Geriatric Care, pension problems, tax problems, legal advice relating to will and succession, etc.

SPORTS CELL

The Sports Cell of A.I.R. is manned by a Director who looks after the coverage of various National and International Sporting Events. AIR arranged live coverage of the Opening and Closing Ceremony of the Beijing Asian Games and broadcast of resume of the highlihts of the day's events. The commentary on Hockey matches were broadcast live. Coverage of the International Permit Meet and of the World Boxing Championship, both through daily reports, were also arranged during 1990.

SPOKEN WORD PROGRAMMES

National Programmes of talks/discussions in Hindi and English are broadcast on every Monday and Tuesday. This National Programme is relayed by a number of AIR Stations depending upon local listening interest. It covers a wide-range of subjects of National Importance and provides support to general Campaigns including National Integration, Communal Harmony, Environmental protection, energy conservation, rural development, family welfare and eradication of social evils such as untouchability, superstitions, etc.

AIR also put out programmes to mark the Birth Centenary of Dr. Ambedkar. AIR has instituted Two Memorial Lectures in Memory of Sardar Vallabh Bhai Patel and Dr. Rajendra Prasad. A National Symposium of Poets is held every year in which eminent poets participate and recite in different languages. This is broadcast on the eve of the Republic Day.

NATIONAL CHANNEL

An important milestone in broadcasting was the commissioning of National Channel on 18 May, 1988, to provide High-quality Programmes. AIR's new venture operates on 1566 KHs (191.6 metres) and covers about 54 per cent of the population spread over more than half a dozen states. Besides other programmes, it broadcasts a programme entitled Vividha, a miscellany of people and places, men and matters and music six days in a week. Transmission hours of broadcast of the National Channel were extended from 7 July, 1989, and the service is available from 1855 hours to 0610 hours daily. A Medium Wave Transmitter has also been installed in Delhi to carry the programmes of National Channel from 27 July, 1989, on 1215 KHz (246.9 metres).

CENTRAL MONITORING SERVICES

Monitoring of Foreign Broadcasts began in India in November, 1939. A Monitoring Unit was put in operation at Delhi as a Branch of Military

Intelligence mainly to collect material for preparation of counter-propaganda and to keep a security-check on enemy broadcasts during the Second World War. In March, 1940, the unit was shifted to Shimla to take advantage of better reception at higher altitude. In the very next year, it was brought under the Department of Information and Broadcasting. In Octorber, 1945, the unit came under the Directorate General, All India Radio. It was brought back to Delhi in April, 1981 and is now located at Ayanagar in the outskirts of the Capital. Later, the unit changed its role to provide information about Foreign Broadcasts for AIR, NSD and to feed key departments like Ministry of Home Affairs, Defence, External Affairs and Information and Broadcasting. The unit celebrated its Golden Jubilee in November, 1989.

With the overall growth of India and its significant importance and also due to various other developments in the Sub-Continent, a need was felt for a more comprehensive organisation to cope with day-to-day emerging new situations. Accordingly, a Central Monitoring Cell was set up in 1986. In 1988, the Central Monitoring Cell and the Monitoring Services were merged and renamed as Central Monitoring Services (CMS) of All India Radio.

CMS monitors 86 Transmissions from 22 Foreign Stations. Besides, transmissions in Indian Languages, also broadcasts in Six Foreign Languages are being monitored at present. The monitoring of Television Telecasts from the Two Neighbouring Countries is also done by the Central Monitoring Services.

AUDIENCE RESEARCH

Audience Research is a functional activity providing basic data for feedback, ready reference and analysis for programme planners on various aspects pertaining to audience composition, its habits, tastes, preference, exposure extent of coverage, impact of the programmes, etc.

It consists of three tiers. The unit is headed by a Director, Audience Research. At the Intermediate Level, there are Five Units each under the charge of a Deputy Director including the one for the Commercial Broadcasting Service of the Central Sales Unit, Bombay. At the peripheral level, there are 20 Units located at various AIR Stations, each headed by an Audience Research Officer. Besides, 25 Additional Units (two at the intermedial level and 23 at the peripheral level) have recently been sanctioned to strengthen the Audience Research under the Seventh Five-Year Plan Scheme.

During 1990-91, the Audience Research Units conducted major surveys: Feed Forward Studies at new coming AIR Stations at 14 places; Study of change of format of main Hindi and English News Bulletins at eight places; Survey on Yuva Vani Programme at two places; Survey on Sanskrit Programme at one place; Survey on Krishi Jagat (Rural) Programme at one place; Survey on 'Communal Harmony' Programmes at nine places; and Survey of a serialized feature entitled 'Mritunjaya' broadcast from Vividh

Bharati at seven places (first-round Survey). Besides the above, the Audience Research Units conducted 90 Weekly Quick Feedback Studies on National Programmes.

TRANSCRIPTION PROGRAMME EXCHANGE SERVICE

Transcription and Programme Exchange Service has three wings—Archives, Transcription and Programme Exchange Unit. This service of AIR helps different stations to exchange outstanding programmes, transcribes the speeches of eminent personalities and maintains the Archives Library.

Archives Library which was set up in 1954 collects and preserves the recorded speeches of President, Vice President and Prime Minister. Voice recordings of eminent Indian and Foreign Personalities have also been preserved. The Music Archives of AIR has a huge repertoire of Indian Classical, Light and Traditional Music in all its variety. The archives has the unique privilege of having recorded the voice of Mahatma Gandhi for over 50 hours among other valuable items preserved. Special efforts are being made to collect rare and old recordings of Master Musicians.

Programme Exchange Unit (PEU) circulates recordings and scripts received from AIR Stations and Foreign Broadcasting Organisations. All National Programmes of Music, Plays, Features, Talks, Interviews and discussions are circulated to the Stations. Contributions from about 50 Foreign Broadcasting Organisations are also received, processed and circulated to AIR Stations.

Computerisation of catalogues both for music as well as spoken word items has been introduced to help speed-up procurement of preserved recorded material for broadcast purposes.

Another major task undertaken was the preparation of volumes of Pandit Jawaharlal Nehru's Speeches. Nearly 2,000 recordings of Pandit Nehru's Speeches from 1946 to 1964 have been dubbed on the new tapes and preserved in the archives.

AKASHVANI ANNUAL AWARDS

Akashvani Annual Awards were instituted in 1974 with a view to bringing-out the best from the staff. In this context, it is significant to mention that some of the programmes/features carved a definite niche for AIR in the World of Broadcasting. *AIR has also been Re-elected as the First Vice-Chairman of Standing Programme Committee of the Asia Pacific Broadcasting Union.* Akashvani Annual Awards for Technical Excellence were instituted in 1979 to encourage healthy competition and recognise merit in the field of Broadcast Engineering.

DOORDARSHAN

Television started in India as an experimental service in September, 1959, with a limited transmission of three days a week. The regular service began in 1965. In 1976, Television was delinked from All India Radio to form an Independent Organization, Doordarshan. It witnessed an uprecedented growth with installation of almost One Transmitter a Day in 1984 and immediately thereafter. Doordarshan new reaches 78 per cent of the population through a net-work of 523 transmitters—159 High-Power Transmitters, 371 Low-Power Transmitters, 75 Very Low Power Transmitters and 18 Transposers. There are 20 Programme Production Centres namely—Delhi, Lucknow, Bombay, Jalandhar, Calcutta, Madras, Srinagar, Jaipur, Hyderabad, Cuttack, Rajkot, Gorakhpur, Ranchi, Nagpur, Guwahati, Ahmedabad, Bangalore, Trivandrum, Panaji and Patna. In addition, Central Production Centre (CPC) having Two Large Studios equipped with modern and sophisticated facilities is also in operation in Delhi since 1988. It is anticipated that with the completion of the Seventh Five-Year Plan Schemes, the number of Programme Production Centres will increase to 48.

Introduction of Satellite Technology for Doordarshan came into operation in July, 1975. Doordarshan has started transmitting the 'National Programme' from Delhi for a duration of 155 minutes from 8.40 PM every day since 1982. Since One November, 1990, this service commences from 8.30 PM onwards on Saturdays and Sundays. To cater to the requirements of the rural and remote people in Orissa, Maharashtra, Gujarat, Bihar, Andhra Pradesh and Uttar Pradesh, Doordarshan started Area Specific Programmes through the facility of INSAT. In addition, with the availability of Satellite Transposers, Doordarshan is now telecasting programmes in the regional language in Maharashtra, Andhra Pradesh, Karanataka originating from Bombay, Hyderabad and Bangalore respectively for all transmitters in these states. Such programmes are received by a large section of rural audience on the Direct Reception Sets (DRS) via Satellite and Very High Frequency Sets (VHF) through Lower-Power Transmitters and High-Power Transmitters installed in the region. With the commissioning of INSAT ID, the Regional Service is proposed to be extended to Orissa and other states as well. This phenomenal expansion backed by indigenous technology has helped in linking the major part of the Country's rural and remote area with the National Mainstream. India's National Multi-purpose Satellite, INSAT 1D, is currently being made use for Telecommunication, Meteorology and Radio besides Television. Doordarshan also started telecasting programmes in colour from August 1982.

Doordarshan introduced the Second Channel of Transmission in Delhi in September, 1984, followed by its commissioning in Bombay, Calcutta and Madras. This has been a landmark towards fulfilment of the targeted three-tier service—the National Service, the Regional Service and the Local Service. The introduction of Second Channel has offered viewers an alternative viewing of programmes of their choice and local interest. From 26 January, 1990, timings of the Second Channel have been revised from 7.30 pm. to 10.30 pm. as against 6.30 pm. to 8.30 pm. It is proposed to introduce similar kind of second channels in 16 other State Capitals during the period of the Eighth Plan. The Central Production Centre, since its inception in 1988, has undertaken production of prestigeous programmes like Ballets and other variety items. Doordarshan has also undertaken ventures of co-production of programmes with different organizations and eminent producers.

A Special Scheme has been evolved for the North-Eastern Region wherein Guwahati will become the main focal point for transmitting programmes in the Regional Languages of all the Seven States in the Region.

Doordarshan introduced its First School Television (ETV) in October 1961. Educational programmes both of enrichment type and syllabus-oriented are being put out by several Doordarshan Kendras. Programme of higher education for Undergraduates in the Colleges was introduced in August, 1984, in collaboration with the University Grants Commission. INSAT 1-D is being utilised for transmission of Primary Education in Orissa, Bihar, Andhra Pradesh, Uttar Pradesh, Maharashtra and Gujarat. The programme of enrichment type in the respective Regional Languages comprises of two segments for the age-groups of five to eight years and nine to eleven years. The total duration of each state is 45 minutes. In addition, area specific programmes in a duration of 35 to 40 minutes relating to Agriculture, Irrigation and Health and Family Welfare are also telecast in these states in the Local Language. To enhance the extent of viewing, the Community T.V. Sets have been provided by the Central and state governments.

Doordarshan started its Morning Transmission in February 1987. Initially it was for a duration of 45 minutes a day which has now been increased to one hour and 45 minutes. It includes Hindi and English News Bulletins, Health Programmes, Children Programmes, Music and Dance items as well as Skits. The transmission is relayed by all Transmitters in the country. Subsequently, afternoon Transmission started operations initially on Saturdays but has now been extended to all days of a week w.e.f. 26 January, 1989. It includes Two Short Bulletins of Hindi and English besides items of interest for children, women and elderly persons.

Commercial Booking of spots on Doordarshan was introduced in January, 1976. Subsequently, Sponsored Programmes were also included. This has not only offered variety in TV Transmission but has brought in participation of a large number of outside talent for the production of programmes besides increasing the Government revenue. *In 1989-90, this revenue amounted to over 210 crore rupees.*

Teletext Service known as INTEXT was introduced at the Delhi Doordarshan Kendra in November, 1985, to transmit information on subjects of common interest like Timings of Train and Air Services, Stock Market and Weather Forecasts, etc. In the beginning, the service was available to the viewers with the help of "Decoder Attachment." Now, a segment of this service is provided on Channel II without the Decoder.

Future plans lay emphasis on augmentation of software facilities, production of increased in-house programming, set-up of Studio Centres at the State Capitals, strengthning feed-back facilities through audience research, Commissioning of Satellite, Microwave and Direct Links for relay from the State Capitals to other transmitters in the state. The basic aim is to provide healthy entertainment, information and education through three-tier programming—National, Regional and Local—for viewers living in different parts of the Country.

PRESS AND PRINT MEDIA

REGISTRAR OF NEWSPAPER FOR INDIA

Registrar of Newspapers for India commonly known as 'Press Registrar' came into being on 1 July, 1956. The Registrar allots newsprint and recommends import of printing machinery for newspapers. The duties and functions of the 'Press Registrar' are defined in the Press and Registration of Books Act, 1867, as amended from time to time.

Indian Press includes 42 Centenarians. The Gujarati Daily *Bombay Samachar* published from Bombay is the oldest existing newspaper. It came into being in 1822. *Anand Bazar Patrika, Punjab Kesri* and *Times of India* retained the first, second and third position respectively circulation-wise.

At the end of 1989, the total number of Newspapers was 27,054 compared to 25,536 in 1988, an increase of six per cent. Among them, 2,538 were Dailies, 144 Tri/Bi-weeklies, 8,353 Weeklies and 16,019 other Periodicals.

Newspapers are published from all the states and union territories. Uttar Pradesh claimed the top position with 3,711 Newspapers. It was followed by Delhi (3,565), Maharashtra (3,137) and West Bengal (2,684). Newspapers brought out from Rajasthan (1,735), Tamil Nadu (1,551), Andhra Pradesh (1,399), Madhya Pradesh(1,534), Karnataka (1,381), Kerala (1,291) and Bihar (1,190).

In the case of dailies also, Uttar Pradesh maintained its top position with 362 newspapers, followed by Bihar (260) and Maharashtra (241).

Newspapers were brought-out in 93 Languages and Dialects. Aprat from the sixteen Principal Languages and a few in Foreign Languages, the highest number of Newspapers were published in Hindi (8,924) followed by English (4,627).

Table 11.1 shows publication of newspapers Language-wise at the end of 1989.

CIRCULATION

Total circulation of Newspapers/Periodicals as on 31 December, 1989, was 58,284,000 copies as compared to 54,873,000 copies in 1988 indicating a increases of 6.2 per cent. According to the circulation data available, 136 come in the category of Big Newspapers (having circulation of more than 75,000 copies), 330 in Medium Category (with a circulation between 25,001 and 75,000 copies) and 3,528 Small Category (with a circulation upto 25,000 copies).

Table 11.1 NUMBER OF NEWSPAPERS IN 1989
(Language and Periodicity-wise)

No.	Languages	Dailies	Tri/Bi	Weeklies	Fortnightlies	Monthlies	Quarterlies	Others	Annuals	Total
1.	Hindi	1013	45	4102	1456	1874	313	102	19	8924
2.	English	197	15	536	423	1899	930	515	112	4627
3.	Assamese	8	2	36	25	33	8	7	0	119
4.	Bengali	63	11	482	341	541	328	111	8	1885
5.	Gujarati	53	4	240	109	375	42	28	9	860
6.	Kannada	148	4	242	144	346	33	13	2	932
7.	Kashmiri	0	0	1	0	0	0	0	0	1
8.	Malayalam	159	1	145	128	548	35	15	6	1037
9.	Marathi	172	13	467	122	378	76	33	76	1337
10.	Oriya	30	0	61	46	188	62	14	4	405
11.	Punjabi	60	1	238	58	193	24	17	1	592
12.	Sanskrit	2	0	5	1	13	11	3	0	35
13.	Sindhi	8	0	27	9	31	4	2	0	81
14.	Tamil	192	5	191	169	526	20	7	1	1111
15.	Telugu	65	2	189	121	297	19	5	1	699
16.	Urdu	269	16	831	236	391	36	13	3	1795
17.	Bi-lingual	37	14	409	223	821	254	90	27	1875
18.	Multi-lingual	9	2	71	41	180	55	25	6	389
19.	Others	53	9	80	32	106	58	12	0	350
	TOTAL	2538	144	8353	3684	8740	2308	1012	275	27054

OWNERSHIP PATTERN

The largest number of Newspapers in all Languages, except Sanskrit and Kashmiri, were owned by individuals during 1989. Joint Stock Company Newspapers were having the biggest share in circulation with 38.9 per cent.

PRESS INFORMATION BUREAU

The Press Information Bureau (PIB) is the Central Agency of the Government of India to disseminate information on its policies, decisions, programmes and activities. The information put out by PIB goes to Daily Newspaper, News Periodicals and News Agencies as well as Radio and Television Organisations both Indian and Foreign. With a Country-wide Teleprinter Network and Air Bag facilities, PIB reaches newspaper organisations not only in Delhi but in all other parts of the Country as well. No other organisation in the Country reaches such a large number of newspaper organisations and other media. At present, PIB distributes its press material to over 8,000 newspaper establishments all over the country.

FUNCTIONS

The main functions of the bureau are to put out information on Government Policies, Programmes and Activities, obtain feedback on how these are received and to apprise the Government of public reaction as published in the News and Editorial Columns of English and Indian Language Newspapers. The bureau also advises the Government on its information policy.

Officers of the bureau at its headquarters in Delhi are attached to different Ministries and Departments of the Government of India. These officers explain and interpret Government Policies and disseminate factual information. The departmental publicity officer also performs the role of public reaction evaluator keeping the Government in touch with public opinion besides providing explanation and backgrounders to official pronouncements. He also acts as an adviser to the Government on Press Relations and Publicity. He maintains constant liaison with Newspaper Correspondents and Representatives of other Mass Media.

The bureau employs a variety of means to disseminate information. Written material issued by the bureau includes Press Releases, Press Communiques, Press Notes and Hand-outs, Backgrounders, Features and Newsletters. The material is put out in English, Hindi, Urdu and 13 other Indian Languages. The bureau also arranges Press Conferences and Briefings to enable Media Representatives to get the news and clarifications at First-hand.

The Head of the organisation is designated as the Principal Information Officer, Press Information Bureau.

PICTORIAL SERVICES

PIB arranges Photo Coverage of Government Activities. A large number of photographs on Government Activities are supplied to dailies and periodicals all over the Country to enable them to supplement written coverage by pictures. The bureau has its Telephoto Equipment with which photographs are transmitted the same day to some of its regional and branch offices. The bureau supplies Ebonoid Blocks to Small and Medium Newspapeers which have no facility to make their own blocks. *Charbas* are supplied to Urdu Newspapers for use in the Litho Process.

ACCREDITATION

At present, there are 1173 Journalists accredited to the Government at the Headquarters. They include Correspondents of News Agencies, Newspapers, Editor-cum-Correspondents, Correspondent-cum-Cameramen, Cameramen, Cartoonists and Cartographers both Indian and Foreign.

CULTURAL EXCHANGE PROGRAMMES

The bureau is the implementing agency for exchange of delegation of journalists between India and Foreign Countries under the Cultural Exchange Programmes and Protocols.

REGIONAL AND BRANCH OFFICES

The bureau has a network of Eight Regional Offices at Bombay, Madras, Chandigarh, Calcutta, Lucknow, Guwahati, Bhopal and Hyderabad, 27 Branch Offices/Branch-cum-information centres and Two Information Centres, most of which are linked with the headquarters by teleprinter. The Two Information Centres are at Aizawal and Port Blair. Through the Regional and Branch Offices, the bureau supplies press material to newspapers and other news media of various Indian languages, besides Hindi and English in all parts of the Country. Libraries are also attached to the Information Centres which serve as repositories of information on various development matters.

NATIONAL PRESS CENTRE

A National Press Centre has been set-up in the Press Information Bureau, New Delhi. It serves as a nerve centre for both the National and international Press. The Centre has all facilities of International Standards like a Telecommunication Centre, a Reference Library, a Press Lounge, a work-room for journilists, a Press Conference Hall and a Cafetaria.

NEWS AGENCIES

PRESS TRUST OF INDIA

Press Trust of India (PTI) was set up on 27 August, 1947, as a Non-profit Sharing Cooperative of newspapers, with a mandate to provide economical, efficient and unbiased news service to all its subscribers without discrimination. PTI took over the Associated Press of India, a news agency set up in 1908 and the Indian operation of the Reuters News Agency. It begun functioning from 1 February, 1949.

Today PTI's news service in the English Languages grosses 1,00,000 words per day. A network of 144 bureaus, a 450-strong Journalist Cadre, over 300 Part-time Correspondents, 11 bureaus and represenation by Stringers at 30 centres Abroad, a support staff-of over 1300 and arrangements with Several Transnational and National News Agencies make-up the backbone of this service.

The eighties was a period of modernisation and diversification for PTI. Its news operations were computerised in 1984. To help Deliver News Reports faster, PTI has now gone in for High-speed Electronic Printers in place of 50-baud Electro-mechanical Teleprinters. With a view to reaching services directly to the subscriber and also to overcome various snags of the point-to-point transmission, the News Agency is now increasingly taking resource to the Satellite Mode of Dissemination through INSAT Satellites. The facility is already available in 15 Cities and Receiver Sets are proposed to be located in 15 more. The accent of PTI's modernisation is on adaption of latest technology to suit its needs and of its subscribers.

To further help in the task of modernisation, PTI has created a separate R and D wing. In collaboration with Madhya Pradesh State Electronics Development Corporation, it has set up a production facility near Bhopal called National Information Technologies Ltd. It caters to PTI's needs of High speed Multi-lingul Electronic Printers, Equipment for Satellite Operations and controllers for its 'News Scan' and 'Com Scan' services.

The process of diversification has seen PTI bringing out Economic Service, Corporate Trends and Science Service as Fortnightly Mailers and Weekly Features in English and Hindi. A 'News Scan' for display of news on Video Monitors was started in 1982. A 'Com Scan' Service of Commercial News on Video Terminals has been in operation since late 1987. PTI has integrated the major Indian Stock Exchanges in a simultaneous display of inter-market share prices on Electronic Boards. India Perspectives, a monthly in English, French, Spanish, Arabic and Urdu Languages brought out by this News Agencies Publication Wing for the Ministry of External Affairs has been received well among readers abroad.

This process of diversification has also seen the creation of Bhasha, A News Service in Hindi started in April 1986 and PTI-Photo, the Country's First Wire Photo Service which began in October, 1987. In early 1986, PTI also set up a Television Facility PTI-TV which has been producing News Clips, Documentries and Video Films for Doordarshan and other clients.

PTI is a leading participant in the Pool of News Agencies of the Non-aligned Countries and the Organisation of Asia-Pacific News Agencies (OANA). From March 1985 till July 1988, PTI was the President of OANA. It is a Major Redistribution Centre in the News Exchange arrangements of both the Non-aligned News Agencies Pool and OANA.

Also on the anvil is a 'Newsbank' Facility through which PTI hopes to provide newspapers and others ready-to-use background material and current data on a variety of subjects.

UNITED NEWS OF INDIA

United News of India (UNI) was registered as a company on 10 November, 1959 and, thereafter, from 21 March, 1961, it began its 'News Operations'. In its 29 years of history, UNI has become one of the Largest News Agencies in Asia with over 100 News Bureaus in India and Abroad. It has about 1000 subscribers in the Country and over 30 abroad. Its News Service is provided to subscribers in Four Gulf Countries as well as in Singapore and Mauritius.

UNI has Reporters in over 300 Big and Small Towns in India. Besides fielding 22 Correspondents in 20 Foreign Countries in all the Five Continents, UNI has collaboration with 19 Foreign News Agencies.

This News Agency launched a full-fledged Indian Language News Service, UNIVARTA, in May 1982 and a National Photo Service in September 1987. Other teleprinter services of the News Agency include UNIFIN, a specialised service for banking, financial and commercial organisation as well as UNISTOCK, a service for stock exchanges and stock brokers.

In July 1986, UNI started its 'Television Wing' which provides News Features and Clips and Documentaries for Doordarshan and other organisations. Another of its specialised service run by the News Agency is UNISCAN, a news service fed into television sets. UNI is to launch shortly an Urdu Service on Teleprinter for the first time in the World.

The United News of India has a number of Mailer Services, the oldest of them being Backgrounders' UNI Backgrounder, both in English and Hindi, are issued once a week. Other Mailer Services are UNI Agriculture Service in English and Gujarati, UNI News Features in English and Hindi, UNI Economic Service and UNI Energy News Service.

The News Agency is computerising its 'news operations' in phases.

NON-ALIGNED NEWS AGENCIES POOL

The Non-aligned News Agencies Pool (NANAP) is an arrangement for exchange of news between the News Agencies of the Non-aligned Countries who have for long been victims of imbalances and bias in the flow of news. The pool came into existence in 1976. India was the First

Chairman of the Pool from (1976-79). The NANAP is a World-wide Operation embracing Four Continents viz., Asia, Eastern Europe, Africa and Latin America. Ever since its inception, the pool has made impressive progress both in the volume and quality of news. The Non-aligned News Agencies Pool News are transmitted in four languages–English, Spanish, French and Arabic. The emphasis of the Pool Partners is more on the exchange of Developmental Stories, Backgrounders, Situationers, Feature Articles, Photographs, etc., rather than the news of everyday politics or other 'Spot-news'.

To coordinate the activities of the Non-aligned News Agencies Pool, there is an Elected Body with an Elected Chairman as its head known as the Coordinating Committee. According to the Pool's Constitution, the Chairman of the Coordinating Committee shall be a News Agency Professional of High-standing, preferably a candidate from the host agency. The Chairmanship which is for fixed term of three years is co-terminus with the tenure of the Coordinating Committee and goes by rotation. The members of the Coordinating Committee are elected on the basis of regional representation, continuity, active participation and rotation. The Committee shall meet atleast once a year and its meetings will be open to all participants. The Chairman and Members of the Committee are elected during the General Conference held at the end of every three years.

The Fifth General Conference of the Pool which was held in Luanda, Angola, assumed the chairmanship of the pool from *Prensa Latina* of Cuba. The Coordinating Committee of the Pool, which meets every year, has so far held 14 meetings since 1977 when the first meeting was held at Cairo. The last meeting of the Coordinating Committee took place at Luanda two days before the General Conference. The Chairman and the Members of the Coordinating Committee are elected during the General Conference, which meets after every three years. At the Fifth General Conference, the following Coordinating Committee composition was elected for the next three years:

Chairman:	ANGOLA
Members:	ASIA—Bangladesh, India, Indonesia, Iran, Iraq, Kuwait, Pakistan, DPR Korea, Syria and Vietnam.
	AFRICA—Botswana, Burundi, Camoroon, Kenya, Libya, Malawi, Morocco, Mauritius, Mozambique, Niger, Nigeria, Rwanda, Togo, Tunisia and Uganda. Cape Verde was accepted as an Additional Member of the Coordinating Committee.
	LATIN AMERICA—Bolivia, Cuba, Ecuador, Mexico, Nicaragua, Peru and Surinam.
	EUROPE—Yugoslavia.

At the Tunis General Conference of the Pool in November 1982, a resolution was passed to form a monitoring group for closer review and monitoring of the pool operations. The first meeting of the group was held in Tunisia in November 1982 and the last, which was ninth in turn, held on the eve of Luanda Coordinating Committeee Meeting. Presently, the Monitoring Group, elected at Luanda General Conference, consists of India, Indonesia, Syria, Algeria, Senegal, Zambia, Cuba, Ecuador, Mexico and Yugoslavia.

India has played a vital role in the creation and expansion of the Non-Aligned News Agencies Pool. So far, Twelve Satellite Links and Four terrestrial Links have been established and another three are in the process of being implemented. India News Pool Desk (INPD) is operated by the Press Trust of India. Beginning from a meagre 300 words daily, the wordage of the outward file of the INPD went upto 10,500 words a day during 1989. INPD also receives News Items from the Pool Partners. During 1989, the desk received approximately 50,000 words a day from the Pool Partners, out of which, after processing and weeding the secondaries, approximately 2500 words a day were issued by INPD to the Indian Media including Indian Newspapers. Several Newspapers all over Country regularly publish News Items issued by the pool. Approximately 250 Newspool items per month are used by the newspapers all over the Country. While the professional aspect of the INPD is the responsibility of the Press Trust of India, without any interference from the Government, the financial aspect is the responsibility of the Information and Broadcasting Ministry.

LIST OF SATELLITE AND TERRESTRIAL LINKS UNDER NANAP

SATELLITE LINK

	(News Agency)	Commissioned on
1.	Bombay-Jakarta (ANTARA)	26.11.1980
2.	New Delhi-Belgrade (TANJUG)	03.02.1981
3.	New Delhi-Havana (PRENSA LATINA)	07.03.1981
4.	Bombay-Bahrain (GNA)	10.05.1981
5.	Bombay-Colombo (LANKAPUWATH)	30.05.1981
6.	New Delhi-Moscow (V.N.A.) (for Hanoi)	02.07.1981
7.	Bombay-Kuala Lumpur (BERNAMA)	02.09.1981
8.	New Delhi-Tunis (ATP)	21.07.1984
9.	New Delhi-London (PTI Bureau)	27.01.1985
10.	New Delhi-Harare (ZIANA)	18.08.1986
11.	Bombay/New Delhi-Baghdad (I.N.A.)	21.04.1987
12.	Bombay/Lusaka (ZANA)	28.03.1989

TERRESTRIAL LINKS

1.	Calcutta-Dhaka (B.S.S.)	01.06.1980
2.	Delhi-Islamabad (APP)	30.10.1982
3.	Delhi-Kathmandu (RSS)	07.03.1983
4.	Delhi-Kabul (BNA)	03.04.1984

LINKS IN THE PROCESS OF IMPLEMENTATION

1. Bombay-Mexico/Caracas (NOTIMEX/VENPRES)
2. Bombay-Dakar (PANA)
3. Bombay-Tehran (IRNA)

INTERNATIONAL PROGRAMME FOR DEVELOPMENT OF COMMUNICATION

International Programme for Development of Communication (IPDC) was set up in 1981 to promote communication capabilities in Developing Countries. To look after the work relating to PIDC, 35 Member States are represented on Inter-governmental Council, which in turn elects an Eight-member IPDC Bureau.

India has been re-elected as Bureau's Rapporteur for a two-year term—1990 and 1991. India was elected as Member of Inter-governmental Council for the Third Four-year Term (1990-93) at UNESCO General Conference in Paris in November 1989. India also served Six-year Term as bureau's Vice-Chairman representing Asia Pacific Region.

PRESS COUNCIL OF INDIA

The Press Council of India is a body unique in nature from its counter-parts in the Western Countries in that while most of the other similar bodies are voluntary organisations, *the Indian Press Council is a creation of an Act of Parliament.*

The object of the council requires it to keep under review all such developments as may have ramifications incidental or conducive to the maintenance of a free and responsible press. The council comprises of 28 Members besides the Chairman. Twenty out of the 28 Members belong to the newspaper World. Of the remaining eight, one each is nominated by the Bar Council of India, the University Grants Commission and the Sahitya Academy and Five are Members of Parliament, Three from the Lok Sabha and Two from the Rajya Sabha. Justice Mr R.S. Sarkaria is presently its Chairman. The council functions primarily through its Committees, the most important and active being the Inquiry Committees, which dispose of complaints filed before the council.

In keeping with these objectives the council, during the course of the years. It renders several adjudications expected to serve as guiding principles for the conduct of the Press and the authorities alike. Important principles contained therein relate to Ethics of Publication, advertising in the Press Management-edior Relationship, Communal Writings and use of pressures to have the press toe the line of the authorities, etc.

Statistical data shows a marked increase in the number of complaints filed with the council during April, 1990 and March 1991. The council received 650 complaints as against 500 received during 1989-90. This does not include several complaints of miscellaneous nature which do not call for Inquiry under SECTIONS 13 AND 14 of the Press Council Act. During the period, the council disposed of 175 matters through adjudication whereas 503 matters were disposed at the preliminary stage through settlement or for lack of sufficient grounds for Inquiry. The council is working at an increasing pace to dispense faster justice.

The Press Council of India has also viewed with concern the recent flare up of Communal and militant violence in the Country with direct impact on the working of the Press.

It set up a Sub-committee to look into the allegations of biased coverage by the Press and Partisan attitude of the authorities towards the press vis-vis the Babri-Masjid Ramjanmabhoomi Controversy in Ayodhy in October-November 1990. On the basis of this report, the council has laid down certian guidelines for observance by the both the Media and the authorities faced with similar situation in future.

The council, while adopting the report fo its sub-committee on the Media's Role in Punjab, has extended full support to the Press in Punjab in its efforts to inform the people truthfully and impartially of events and circumstances in the state and in resisting any code or norms sought to be imposed on it through force or intimidation by any extraneous authority or organisation.

RESEARCH AND REFERENCE DIVISION

The Research and Reference Division, a Media Unit under the Ministry of Information and Broadcasting, came into operation on 9 August, 1950, after it was abollshed following a Cut-Motion in the Central Legislative Assembly. It is a Lineal Descendent of Foreign Publicity and Planning Office and Counter Propaganda Directorate, both of which are World War II Creations.

The division functions as an Information Servicing Agency to the Ministry of Information and Broadcasting, its Media Units and the field offices as well as outside clientaee including educational institutions and libraries all over the Country.

Soon after being revived, the Research and Referecne Division was given the following tasks to be performed by the Government of India which includes (a) to undertake research on matters of publicity, (b) to provide guidance and Background Notes on Current Affairs and other topics, (c) to build-up a compendium on knowledge on important subjects and (d) to prepare publicity material for the use of various Media Units of the Ministry of Information and Broadcasting. It also collects detailed information on various subjects and studies in-depth problems of National Significance. The division also provides various United Nation Bodies and other well-known International Reference Publications, information about India.

REFERENCE WORK

The division compiles on regular basis Backgrounders, Reference papers, Fact-sheets, Diary of Events, etc., on events and issues of National and Public Importance. Biographical Sketches of Eminent Indian Personalities including Freedom Fighters is also the task undertaken by it. This Media Unit also prepares Draft Notes for various National and International Functions inaugurated, attended, etc, by the Minister of state for Information and Broadcasting and the Deputy Minister.

'INDIA'—A REFERENCE ANNUAL

The Research and Referecne Division compiles annually the prestigious and esteemed over One Thousand Page Book known by the name of 'India'—A Reference Annual'. This book was first published in 1953 and, science then, 35 issues have been released so far. It contains comprehensive information on Indian Economy, its political and social institutions, culture, plans, policies, programmes and strides made since independence. Comprehensive information is also provided on Geographic and Demographic Features of India.

This Reference Annual is a well–documented study and is rated very high as a book of Reference on India' and is also a rich source of information for reasearch scholars, students, officials, journalists, acadenmicians, professionals and others. Information-in this book has been compiled from official and other authentic sources including central Ministries/Departments/State Governments/Union Territory Administrations and other Government Agencies. Vast, varied and crucial subjects like Agriculture, Planning, Finance, Defence, Education, India and the World, Communication, Scientific Research, Environment, Industry and Transport are also part of it.

NATIONAL DOCUMENTATION CENTRE ON MASS COMMUNICATION

The National Documentation Centre on Mass Communication was set up as a part of the division in 1976 with the broad objective of collecting, interpreting and disseminating information relating to the agencies, events and trends in the Field of Mass Communication including Press, Radio, Television, Advertisting, tradition and Folk Media and Different Media Units of the Central and State Governments. This Documentation Centre documents and indexes news items, articles and other information material on Mass Communication and Mass Media. It also desceminates the information collected by it through Eight Popular Services-'Current Awareness Service', 'Reference Information Service', 'Bibliography Service', 'Who's Who in Mass Media', 'Honours Conferred on Mass Communicators', 'World Media Service', 'Media Memory', and 'Bulletin on Film'.

MASS MEDIA IN INDIA

The National Documentation Centre on Mass Communication of the division also brings out over 250 page reference annual on Mass Communication known as 'Mass Media in India'. Already, Ten Issues of this book have been published. The book brings together in one volume various information and statistical data on the activities of various media organisations of the Central and State Governments/Union Territories. It carries articles on important events and developments having taken place in different Mass Media. Articles in the book, especially written by Media Experts primarily aim at providing the perspective and factual information on a particular media or some of its specific aspects of problems. The Mass Media in India' strives to serve as a reference book on various aspects of Mass Media in the Country and fulfils the needs of media operators, those interested in the field of Mass Communication, Researchers and Students. Contributors to this book are Journalists of name, fame and standing and other Luminary Academicians of high institutions of learning.

LIBRARY

The division maintains a well-stocked Reference Library with a large and varied collection of books on all aspects of the Country and its sectors, on National and International Issues including very current ones, Magazines Newspapers, Weeklies, Fortnightlies, Encyclopedia, etc. and on vast various disciplines of Mass Media which includes in-depth studies on Mass Communication Subjects. The library receives around 150 Indian and Foreign Journals. It is also a *one-point depository* of the reports of various Commissions and Committees. The library serves to over 700 Accredited Correspondents in the Capital and a large numbers of Government's Own Media Men.

Built around the library is a whole range of documentation reference, under which books, articles appearing in journals, reports and reference papers received from the Ministries, Departments and a number of public and private institutions are indexed and catalogued subject-wise. A separate unit scrutinises Leading Newspapers in the Country to take out clippings on a variety of current events and issues and indexes them subject-wise. This vast storehouse of evergrowing information material is put to use for preparing Background and Reference Papers and for meeting special day-to-day queries and demands from the Media Units of the Ministry, other Ministries and Departments of the Government and the Pressmen.

The 'News Index' maintained by the division includes articles from 18 Major Periodicals. Significant news items, articles and editorials from Ten

Metropolitan and Mofussil Dailies were clipped and classified for reference.

The division is in the process of computerising its documentation and retrieval services. This will not only impart speed and efficiency to the division's research and reference activities but also prove helpful to the users including Press Correspondents who visit the division's library for their professional work.

PHOTO DIVISION

The Photo Division, a subordinate office of the Ministry of Information and Broadcasting, is engaged in photographically documenting the growth and socio-economic development and cultural environment in the Country and provides visual support required in communication. It has a valuable collection of photographic negative of archival value on major news events. Photo Division is the biggest production unit of its kind in the Country in the field of photography with gigantic production crossing more than six lakh prints per annum in various sizes. The division provides Photographic Prints for Internal and External Publicity. The Caption and the Positive Print Albums are maintained in a separate 'Photo Library' in the Press Information Bureau at Shastri Bhavan in New Delhi. The library is the main feeding channel to the outside agencies. The division has a well-equipped colour laboratory to meet the requirements of colour prints.

The division supplies Black and White Colour Photographs of important National and International Events to the Press Information Bureau for distribution to the Press in the Country and Missions Abroad. It also undertakes photo coverages of visits abroad of Prime Minister, Vice-President and other VIPs and transmits Radiophotos of the coverages for publicity in the Indian Press. In so far as the coverages are concerned of Still Photographic Assignments in states where the division has no Regional Office/Unit, Photographic Officers undertake such assignments whenever called upon to do so. These officers also accompany the VVIPs/VIPs both Indian and Foreign for their photo coverages on their tours anywhere in the Country as required also.

Photographs are supplied free to the Press through the Press Information Bureau and on payment by this division under the *Pricing Scheme* to various Government Departments, non-publicity organisations and members of public, etc., for their use. The division also provides training in photography to the Photographers from Commonwealth Countries under the Colombo Plan.

During March, 1991, the Photo Division organised its Third Annual National Photo Contest and Exhibition on the theme "Literacy For All" by inviting photographs from the Amateur Photographers in the Country, maximum four photographs in each section i.e. Black and White and Colour Section. Awards were presented also.

The main office of the Photo Division is now located at Soochna Bhavan in New Delhi besides three regional offices at Bombay, Calcutta, Madras and a Photo-Unit at Guwahati.

PUBLICATIONS DIVISION

The Publications Division, a media unit of the Ministry of Information and Broadcasting, provides update and authentic information on all subjects of National Importance at Home and Abroad through books, albums, journals in English, Hindi and Major Indian Languages. It offers healthy literature and reading material for readers across all the strata of the society. *It has emerged as the largest publishing house in the public sector.*

The division was set up as a part of the Home Department in January 1941 and was then known as the Foreign Branch of the Bureau of Public Information. In 1943, the office was transferred to the Department of Information and Broadcasting and was re-designated as the Publications Division in December 1944.

FUNCTIONS

The aim of the Publication Division is (1) to disseminate information about the country's Development in various fields (ii) to facilitate National Integration by promoting greater awareness and understanding among the people of different regions adhering to different faiths and beliefs (iii) to stimulate interest in aid to generate appreciation and respect for variegated pattern of life and culture in India.

The books, albums and journals brought out by the division are, therefore, designed to broaden the readers understanding of the Country, its people, history, biography, social structure and cultural and linguistic patterns. The subject covered are as varied as art and culture, flora and fauna, travel and tourism, biographies of eminet persons, Speeches of National Leaders, etc. Specialised Women and Children Literature is another area to which the division pays attention. The publications also include books on Popular Science, Education, History, Fine Arts, Ecology besides Reference and other Specialised Literature.

A separate wing of the division has been entrusted with the task of compiling and editing writings of Mahatma Gandhi both in English and Hindi. Ninety Volumes in main series in English and 81 Volumes in Hindi have already been published. Volumes I and II of the Supplementary Series in English have also come out. Volume - 82 in Hindi is expected to be released by the end of March, 1991.

The division has so far brought out over 6300 books and volumes in Hindi, English and Major Regional Languages of the Country. On an average, it now publishes about 80 to 100 titles every year. In April-December 1990, the division brought out 37 books in English, 60 books in Hindi and 30 books in other regional languages, thus, 127 books in all. Thirty four more titles are expected to be released by the end of March, 1991. The division continues to publish the series of low-priced books under the title 'Books for Millions'.

The division publishes 20 journals of varying periodicity devoted to different disciplines. These journals are being published in English, Hindi and other Regional Languages. 'Kurukshetra' a monthly journal in English and Hindi is devoted to project the all-round development, achievements and experience under the plans in the field of rural reconstruction and cooperation. The monthly journals 'Ajkal' (Hindi) and 'Ajkal' (Urdu) are mainly devoted to literature and culture. 'Bal Bharati' in Hindi is 8-15 age group monthly devoted to inculcating writing habits in children. 'Yojana' fortnightly is brought out in 12 Languages. It seeks to carry the message of the plans to all the sections of the people and promote interest and discussion on problems of economic planning, development and accompanying social change. Apart from above books and journals, the division is also the publisher of 'INDIA-A REFERENCE ANNUAL' and 'MASS MEDIA IN INDIA' compiled by the Research and Reference Division. A highly ambitious publishing programme in close cooperation with UNICEF has also been launched by the division.

During 1990, the division made significant expansion of its publishing programme by launching two new low-priced series. 'Quotable Quotes' from Great Men and Women of India are designed to be handy and to put across their message to all sections of readership. The other one 'Bharat Ki Mahan Naarian' has been introduced as part of the observations of SAARC Year of Girl Child. In 1990, on the Birth Anniversary of Mahatma Gandhi, the division launched its own quarterly News Letter 'Publications Samachar' to present a glimpse of its own activities.

ORGANISATIONAL SET UP:

The division is headed by a Director. He is assisted by Joint Directors, Chief Editors, Editors, Deputy Directors, Circulation-cum-Advertisement Manager and a host of specialised officers manning editorial, production, business, art and other wings. The work of the division is divided functionally into Five Main Wings: (a) Editorial (b) Production and Art (c) Business (d) Administration (e) Employment News. The activities of these wings are detailed below:

EDITORIAL WING:

The functions of the Editorial Wing include writing original scripts, processing and editing manuscripts sent by the sponsoring ministries or written by commissioned authors, preparation of press copies of the books in English, Hindi and Major Regional Languages and Publications of Journals in all the Principal Regional Languages.

PRODUCTION AND ART WING

The division has a studio manned by professionally competent commercial artists and photographers who illustrate and design publications to make them interesting and attractive. The Production Wing looks after the post-editorial operations. This wing supervises the printing and production of books and journals brought out by the division. The printing presses in both private and public sectors are commissioned for printing its publications.

BUSINESS WING

The business wing organises marketing and distribution of the publications of the division. These are sold through a network of over 8000 authorised booksellers and division's own Departmental Sales Emporia located at New Delhi, Bombay, Calcutta, Madras, Patna, Trivandrum, Lucknow and Hyderabad. The Sales Emporia of the Publication Division also markets the publications of 21 other Government Departments and autonomous organisations such as the National Museum, All India Handicrafts Board, Council of Scientific and Industrial Research, National Book Trust, etc. It also sells and distributes text-books published by the National Council of Educational Research and Training. Recently, the division introduced a bus converted into a Mobile Book Shop to sell the publications in Delhi and surrounding towns. Between April - December, 1990, the division participated in 23 Major Book Exhibitions/Fairs in India and proposes to participate in another ten Book Fairs/Exhibitions before the end of the financial year. Through the National Book Trust, the division also participated in book exhibitions in London, Frankfurt, Singapore and Malaysia.

The division earned Rs 866.21 lakh revenue between April-December 1990. The sales are expected to touch Rs 12.25 crore by the end of March 1991. The division also procures advertisements from public as well as private sector for its journals and References Annual publications - INDIA and BHARAT.

EMPLOYMENT NEWS

The task of one of the wings of the division is to prepare, produce and market the weekly 'Employment News' in English and 'Rozgar Samachar' in Hindi and Urdu. The periodical seeks to project not only the largest assortment of job vacancies in Central/State Government Departments, undertakings and educational institutions but also to provide encapsulate guidance material to enable prospective candidates to prepare for various tests/interviews. This periodical continued its onward march and moved into the top bracket of first seven newspaper journals of highest circulation in the Country. The weekly also played a distinguished role in the special recruitment drive to fill posts reserved for SC/ST Candidates launched by the Government. The print-run which averaged around 3.89 lakh copies during 1989-90 is poised to average 4.10 lakh copies in 1990-91.

BHARATENDU HARISHCHANDRA AWARD

The Bharatendu Harishchandra Award was instituted by the Publication Division on the suggestion given by Hindi Advisory Committee of the

Ministry of the Information and Broadcasting in 1983. Under this scheme, Indian writers are awarded every year to encourage original and creative writing in Hindi and various disciplines of Mass Communications viz., AIR, Broadcasting, Doordarshan, Journalism, Print Media etc. In 1990, the First, Second and Third prize winning entries carried Rs 25,000, Rs 15,000 and Rs 10,000 respectively. So far, 26 Authors have been awarded under this scheme.

ADVISORY COMMITTEE

With a view to improve the overall working of the Publications Division, the Ministry of Information and Broadcasting has appointed an advisory committee of experts to suggest guidelines by which the dimension and quality standard of its publications could be streamlined. The committee has been reconstituted with Eminent Literatur, Dr B K Bhattacharya as its Chairperson.

ADMINISTRATION WING

The management of the division's offices at headquarters and outside and staff matters are looked after by the Administrative Wing.

AUDIO-VISUAL MEDIA

Feature films are being produced in India since 1912-13. While R.G. Torney along with N.G. Chitre made *Pundalik* in 1912, Dhundiraj Govind Phalke (1870-1944) produced *Raja Harishchandra* in 1931. The Era of Silent Films was overtaken by the Talkie era in 1931 when Ardeshir Irani (1886-1969) produced *Alam Ara,* though Silent Movies continued to be produced till 1934. India now leads the World in the annual output of Feature Films.

CENTRAL BOARD OF FILM CERTIFICATION

Films can be publicly exhibited in India only after they have been certified by the Central Board of Film Crtification (CBFC). The board set up under the Cinematograph Act, 1952, has to consist of a Chairman and minimum of 12 and a maximum of 25 Non-official Members, all appointed by the Government. The board functions with Headquarters at Bombay and Seven Regional Offices at Bangalore, Bombay, Calcutta, Hyderabad, Madras, Trivandrum and New Delhi. The Regional Offices are assisted in the examination of films by the Advisory Panels which include eminent educationnists, art critics, journalists, social workers, psychologists, etc. The board examines films for certification in accordance with the provisions contained in Cinematograph Act 1952, Cinematograph (Certification) Rules 1983 and the guidelines issued by the Central Government in this regard. In 1989, the board certified 781 Indian and 139 Foreign Feature

Films, 1240 Indian and 419 Foreign Short Films, Nine Indian and Three Foreign Long Films other than Feature Films, all in celluloid. During this period, the board certified 62 Indian Feature Films, 213 Indian and 915 Foreign Short Films, 48 Indian and 30 Foreign Long Films other than Feature, all in video. The total number of certificates issued was 3859.

Film Certification Appellate Tribunal (FCAT), constituted in March, 1984, hears appeals against the decision of the Central Board of Film Certification. The headquarters of the tribunal is at New Delhi.

FILMS DIVISION

Films Division is the Largest National Agency devoted to the production and distribution of Documentaries and News Magazines. The division was set up in 1948 to revive the production of Newsreels and Documentary Films. It produces News Magazines, Documentaries and 16mm Featurette for rural audience in Regional Languages. It also produces Cartoon Films and Educational Films for Agriculture and Defence Ministries and Family Welfare and other departments for the Government of India.

The distribution outlets for these films are Doordarshan, Theatrical Circuits having a weekly audience of almost ten crore to twelve crores and Non-theatrical Circuits consisting of Field Publicity Units of Central and State Governments and other non-theatrical exhibition channels like Educational Institutions, Industrial Houses, Social and Cultural Organizations and Film societies etc.. It is expected that about five to six crore of rural audience is exposed to these films every week.

The Division's Films are also screened Abroad through the Indian Embassies, Television Networks, Government departments, Educational, Cultural and Social Organisations as well.

It makes films through in-house directions and also associates talent from the open market in some of its productions. During January, 1990 to December, 1990, this Division has produced a total of 152 Documentary Films and 28 News Magazines.

The Films Division releases prints of One Documentary Film and One News Magazine alternately every week for public exhibition through cinema houses throughout the Country. They are required to screen such films not exceeding 609.8 metres (2000 ft) under the compulsory exhibition scheme. During January, 1990 to December, 1990, 77 Documentaries, 17 Quickies and 25 News Magazines were released in the Theatrical Circuit. It supplied 44,027 Prints of Documentaries/News Magazines and 14,107 prints of Family Welfare Films for the Theatrical Exhibition. It also accepted for release 4,795 Prints of 49 Documentaries and 69 Newsreels produced by different state governments. The division continues the production of 16mm Rural-based Featurettes in languages and dialetts of the Tribal and other Backward Areas of Southern and Eastern Regions of the Country at its regional Production Centres at Bangalore and Calcutta. Some of the productions of Regional Centres have won the National and International Awards. The Division has a separate unit for making Cartoon

Films including animation sequenes for Documentaries and News Magazines. The Newsreel Unit of the division produces News magazines which cover important National and International Events.

Films produced by this division have won National and International Awards. The Films Division has bagged One International Award in Hungary and seven National Awards in the 37th National Film Festival of India and also 43 Certificate of Participation for their Films in the Ist Bombay International Film Festival for Documentary and Short Films, 1990.

The Branch offices of the Films Division located through out India have films libraries of 16mm prints of Documentary Films and Newsreels. During January, 1990 to December, 1990, 632 Prints and 1845 Cassettes were sold and a revenue of Rs 42,52,384.80 p. was earned including sale of Stock Shots. During the same period, Branch Offices supplied 1,171 Prints to 478 parties for film shows. The Branch Offices also arranged number of film shows in their respective territories to secure the people,s involvement in the National Tempo.

Films Division also organised festival of its films in various State Capitals for the benefit of educational institutions and the general public. The Films Division arranged its Ist Bombay International Festival of Short and Documentary Films, 1991. The Festival was attended by nearly 70 delegates from over 40 countries. A week long festival was a great success.

The division earned the revenue during January, 1990 to December, 1990 amounting to Rs 710.34 lakh through rental of cinema houses, sale of prints and video cassettes and sale of stock shots, etc.

NATIONAL FILM DEVELOPMENT CORPORATION LIMITED

The National Film Development Corporation (NFDC), the Central Agency established to promote good cinema in the Country after the amalgamation of the erstwhile Film Finance Corporation and Indian Motion Picture Export Corporation in 1980 has provided over the years a wide-range of services essential to the integrated growth of Indian Cinema. In April, 1990, NFDC completed a decade of its useful and meaningful contribution to the Indian Film Industry. As films constitute an important segment of audio-visual culture, NFDC covers a wide gamut of activities—production of films, export of Indian films, import of Foreign Films, distribution, construction of cinema theatres, import and distribution of raw stock, bringing in and development of technology, production and marketing of recorded video cassettes, etc. NFDC promotes the concept of the low-budget film. Primarily, the low-budget films signifies an economical way of making a film-and of doing away with extravagance. The low-budget yet high value film is one of the possible answers to the financial problems of film-making being faced today in our Country.

The National Film Development Corporation has launched its programme of co-productions with the tremendously sucessful 'GANDHI', directed by Sir Richard Attenbrough, which won top awards the World Over, including Eight Oscars. NFDC has also co-produced a Seven-Episode TV Serial with M/s Technisonor, a public sector undertaking in France. 'SALAAM BOMBAY', a Mirabai Films—NFDC—Doordarshan— Film Four International—Cadrage S.A. and La Sept Co-production, has also bagged 13 Top Awards in various International Film Festivals including the Camera D' Or at Cannes. The film 'UNNI' is also a foreign co-production. Also under the agreement signed between NFDC and Doordarshan, Good Feature Films and Telefilm, with the objective of telecasing them on the National and Regional Network, are being produced jointly. These films will also be exploited in other circuits, both commerciaol and non-commercial within India and Abroad. Upto 31 March, 1990, 14 films have been approved under this scheme. Two films have been completed while the remaining are under production. NFDC also undertakes production of films based on good scripts and to be directed by Well-known Directors. Under this scheme initiated in 1980-81, so far 23 films have been approved, 20 have been completed and three were under production as on 31 March, 1990.

THEATRE FINANCE

The Theatre Financing Scheme was formulated and put into execution by the NFDC to ensure creation of additional seating capacity in the Country and Provide outlets for good cinema under this scheme. This scheme was started with an initial loan from the Government of India out of blocked funds of the Motion Picture Exporters Association America (MPEAA). Subsequently, this amount was augmented with NFDC's own surplus funds. 147 theatres have been financed all over the Country. 88 theatres have already began functioning. The total seating capacity generated as on March 31, 1990 is 69,925.

IMPORT

The corporation presently imports about 50 to 60 films a year. Since its inception, it has imported around 400 films. There has been a conscientious attempt to expose Indian Audiences to a variety of films from Different Countries like the U.S.A., U.K, France, Romania, New Zealand, Sweden, Spain, Italy, Czechoslovakia, Australia, Hungary, Poland, West Germany, Canada, Japan, Hongkong, Turkey and USSR. However, keeping in mind the limited resources of the corporation, a greater stress is necessary on import of good qulity Commercial Family Entertainers. The corporation renewed its agreement with the MPEAA during the year. The agreement signed for a three year period permitted the MPEAA to import 100 films (including acquired films and reissue rights) per year. The agreement with Sovexport Film was also signed lately permitting it to import upto 30 films per year. The NRI Import Policy Continues.

Over the last few years, NFDC has built up a strong distribution network for Foreign Films in India. Over 300 Imported Films are now in circulation serving an impressive number of bookings annually. NFDC's distribution programme to the non-commercial circuits includes Indian Films too.

In order to give an All India Exposure to the Films in the Panorama Section of the International Film Festival of India, the Corporation introduced the scheme of organising Regional Panorama Film Festivals all over India. The scheme has been recognised all over with great enthusiasm. All Regional Films are subtitled in English.

EXPORTS

India Exports Films to over 100 Countries in the World. NFDC is the canalising agency for the export of films. The corporation participates in various International Film Festivals and sends delegates to Film Markets to promote Indian Cinema. The corporation plays host to a number of buyers from Various Countries. Direct export performance by NFDC has further gone up to an all-time high of Rs. 201.10 lakh during 1989-90 as against Rs 176.66 lakh during 1988-89, recording an increase of 14 per cent. India is the Largest Film Producing Country in the World producing over 800 Feature Films and 3000 Shorts annually. The raw stock required by the Indian Film Industry is canalised through the NFDC.

VIDEO PRODUCTION AND MARKETING

As one of the bold steps to fight Video Piracy, NFDC started marketing good quality Legal Video Cassettes to Video Libraries through their distributors. Over 170 titles have already been released. Besides Foreign Films, the corporation is marketing Video Cassettes of Indian Film Classics. Styajit Ray,s APU TRILOGY on cassettes has been widely appreciated. The corporation launched NFDC Video Classics which consists of Classic Titles from all over the World.

To fight against Video Piracy, NFDC in collaboration with the Indian Film Industry, initiated the formation of an anti-piracy body, Indian Federation Against Copyright Theft (INFACT) registered as a company under the Companies Act.

SPECIAL TECHNICAL PROJECTS

NFDC's Film Centre in Calcutta provides production and post production infrastructure consisting of 16mm Cameras, Tape-recorders for synchronous shooting, editing tables and re-recording equipment at reasonable rates. The Film Centre is provided with the latest type of Electronic Micro-processor controlled projector for 16mm as well as 35mm format. The services of this centre have been well-appreciated by Film-makers of the Eastern Region.

One of the NFDC's notable achievements has been the setting up of a Sub-titling Unit in Bombay. NFDC can claim high-technical quality in its sub-titling work—this has been confirmed time and again by the appreciation the corporation receives from various National and International Agencies. The Sub-titling Unit has so far helped in saving more than Rs 200 lakh in foreign exchange for the Country. Now the centre has the facility for 16mm Sub-titling as also Video Sub-titling. The centre is providing valuable service to the Ministry of External Affairs, Directorate of Film Festivals, National Film Archive of India, Producers, etc.

NFDC's Video Centre in Madras is equipped with Rank Cintel Mark III 35mm Telecine Projector. The centre provides transfer facilities in 35mm and 16mm, editing facilities on 3/4" U-Matic System and duplication facilities from 3/4" to 1/2" cassettes.

The corporation is bringing out an analytical Trade Magazine titled 'CINEMA IN INDIA' as part of its development activities. This magazine was recast to make it more useful and financially viable. It has now been converted from a Quarterly Magazine to a Monthly Magazine.

NATIONAL FILM CIRCLE

The corporation, jointly with the National Film Archive of India, (NFAI), Pune, and Nehru Centre, Bombay, has established a National Film Circle in Bombay. This circle has a paid membership where the members are eligible to see good films from the NFDC collections, panorama films, class foreign films, etc.

Serveral retrospectives are also held with the help of Consulates and over 100 films are screened every year.

DIRECTORATE OF FILM FESTIVALS

The Directorate of Film Festivals was set up in 1973 under the Ministry of Information and Broadcasting, to help promote good cinema and Indian films in the Country and Abroad. The functions of the directorate are to organise: (a) International Film Festivals; (b) National Film Festivals; (c) Film Weeks under Cultural Exchange Programmes, and (d) participation in International Film Festivals Abroad. It also gives away the National Film Awards and organises Special Film Programmes.

The Directorate was brought under the National Film Development Corporation in July, 1981, and, in July, 1988, it was again transferred to the Ministry of Information and Broadcasting.

Another major policy change was the elimination of the Competition Section in the 12th International Film Festival of India (IFFI) held in January, 1989. Because of the competition Section having been dropped, the festival organised at Calcutta was renamed the "21st IFFI" or "IFFI '90" with the festival duration reduced from a fortnight to ten days only.

The last International Film Festival of India—"22nd IFFI" or "IFFI '91"—was held from January 10-20, 1991 at Madras. It attracted a total of 159 Films from 38 Countries.

The 38th National Film Festival was held in May, 1991. The Dada Saheb Phalke Award for the year was presented to Akkineni Nageswara Rao.

During the calendar year 1990, India Film Weeks' were organised in Turkey, Hungary, Ghana and Burkina Faso and 'Film weeks' of the GDR, Egypt, China, France and Turkey were organised in India. Indian Film Expositions outside Cultural Exchange Programmes were also organised in Lugano (Switzerland), Mongolia and Amsterdam (Netherlands). Indian Films were sent for participation in a total of 50 International Film Festivals Abroad during the same period.

A 'Bharatiya Filmotsav' was also organised for the first time during 1990. This was held in Ahmedabad, Gujarat in December and 44 films (Including Non-features) were screened, in addition to some Foreign Films.

NATIONAL FILM ARCHIVE OF INDIA

Established in February 1964 as a Media Unit of the Ministry of Information and Broadcasting, the primary objective of the National Film Archive of India (NFAI) is to acquire and preserve the heritage of National Cinema and the Best of World Cinema. The archive has made considerable progress in the preservation of Films/Audio/Vedio Material, Documentation and Research and Dissemination of Film Culture in the Country.

The archives collection has 12202 Films, 19746 Books, 173 Periodicals 20,835 Scripts, 1,07,648 Press Clippings, 7038 Pamphlets/Folders, 85,976 Stils, 1822 Disc Records, 115 Audio Tapes, 532 Video Casettes, 1,975 Micro-films, 2,280 Slides, 5,196 Wall-Poster, 42 Microfische and 5708 Song Booklets. Notable among its acquisitions are several Early/Silent/Talkie Films from India and Abroad, as well as Recent Award Winning. Films and Representative Works of the Masters of World Cinema. It has been acknowledged as one of the Major Film Archives in the Asian Region, on par with Established Archives in Europe and North America.

The archive's "Film Circle" programme of weekly screenning at Bombay, Bangalore, Calcutta, Trivandrum, Bhopal and Pune exposes interested local audience to the best films from India and Abroad. To commemorate the Platinum Jubilee of Indian Cinema, NFAI organised photo exhibitions depicting the evolution of cinema in the Country at various centres. NFAI also organises Film Appreciation Course at Pune every year to stimulate a serious interest in the systematic understanding of cinema as a medium of art and communication. In addition, the archive conducts Five to Eight Short Courses of five to ten days duration in various parts of the Country.

The archive functions as the main repository for Indian and Foreign Research Workers for viewing Film Classics in connection with their research projects. The Archives Distribution Library, with a representative collection of Indian and Foreign Film Classics, cater to over 300 Film Societies and Film Study Groups in Educational Institutions in the Country. The archive also sponsors research projects pertaining to the Study of Various Aspects of the Indian Cinema. It plans to bring out Indian Filmographies (1900-85) shortly. NFAI is a member of the International

Federation of Film Archives. It has helped NFAI in etablishing fruitful contacts with Film Archives Abroad and besides Provides expert guidence on problems relating to film preservation, restoration, computerisation and retrieval of archival data.

With headquarters at Pune, NFAI has at present Three Regional Offices functioning at Bangalore, Calcutta and Trivandrum.

CHILDREN'S FILM SOCIETY

The Children's Film Society, India, (CFSI) was established in 1955 as an autonomous body with the objective to provide the children and the young people films with clean and healthy entertainment. It is engaged in production, acquisition, distribution and exhibition of such films.

Since its inception, CFSI has produced and acquired 274 Feature and Short Children's Films. The society has launched a new programme to carry cinema to the rural and urban areas to involve greater participation of younger generation in children's film movement. CFSI continues to organise Week-long (Mini) Film Festivals in Several Districts in collaboration with the District Authorities and welfare organisations. Till October, 1990, CFSI organised Nine Children's Film Festivals in Nine Districts covering about 5.5 lakh of children. Till March, 1991, CFSI has held 28 such festivals in 32 Districts. Nearly 14 lakh children have benefitted with the screenings of these festival shows.

The society has gained recognition over the years by organising International Children's Film Festivals in India and by participating in Film Festivals Abroad. First International Children's Film Festival was organised in Bombay in 1979, second in Madras in 1981, third in Calcutta in 1983, fourth in Bangalore in 1985 and the fifth in Bhubaneshwar in 1987. The Sixth International Competitive Children's Film Festival which was held in New Delhi in November, 1989, coinciding with the Birth Centenary Celebrations of Pandit Jawaharlal Nehru was a grand success. Indian International Children's Film Festival has been accorded 'A' Category by the International Centre of Films for Children and Young People (ICFCYP), Paris. CFSI launched video format of its films on 14 November, 1990, which is celebrated as Children's Day all over India. CFSI Video Cassettes will now be available in the market in the nook and corner of the Country as Home Video.

WELFARE OF CINE-WORKERS

Parliament had passed three acts in 1981 for amelioration of the lot of Cine-workers. These are: (i)the Cine-Workers Welfare Cess Act, (ii) the Cine-Workers and Cinema Theatre Workers (Regulation of Employment) Act and (iii) the Cine-Workers Welfare Fund Act. All of these came into force in 1984 when the Rules under the Respective Acts were Framed and Notified.

The Cine-Workers Welfare Cess Act, 1981 and the Rules framed thereunder, provide for a levy of cess of Rs 1,000 per Feature Film submitted for certification to the Central Board of Film Certification.

The Cine-Workers Fund Act, 1981, *inter alia* aims at Welfare of Weaker Sections of Cine-workers by providing for dispensaries, maternity centres and educational and recreational facilites, etc., by Film Producers/Film Studios and sanction of gants-in-aid from the welfare fund. Benefit of different schemes under 'education' and 'helath' had since been extended during 1986-87 by the Ministry of labour to which the work relating to adminstration of these acts had been transferred from April, 1986.

The Cine-Workers and Cinema Theatre Workers (Regulation of Employment) Act, 1981, which extends to the whole of India came into force from 1 October, 1984. Adminstration of this act was transferred to the Ministry of Labour from the Ministry of Information and Broadcasting from 1 April, 1986.

The act provides necessry safeduards to Low-paid Artists and Technicians engaged in production of Feature Films with regard to their terms and conditions of employment, payment of wages and otehr amenities. The act stipulates that no person shall be employed as a Cine-worker unless an agreement in writing is entered into with him by the Producer of a Film or the Contractor and such an agreement is Registered with Competent Authority Notified by the Government.

The act provides for appointment of Conciliation Officers and Competent Authorities by the Central Government for mediating and promoting settlement of disputes between Cine-workers and Producers of films. It also provides for Constitution of Cine-workers Tribunals' by the Central Government for adjudication of disputes referred to them relating to any matters specified in the agreement.

So far, the Central Government has notified the appointment of Concliliation Officers and Competent Authorites in all Major Film Producing States. Also, Cine-workers Tribunal' has been set up at Madras for Tamil Nadu.

The Cine-Workers and Cinema Theatre Workers (Regulation of Employment) Act, 1981, was amended in 1988 by the Cine-Workers and Cinema Theatre Workers (Regulation of Employment) Amendment Act, 1988, which came into force from 16 August, 1988. By the above amendment, a NEW SECTION 22-A was inserted with a view to delegating powers of the Central Government Exercisable under the act to the state governments to ensure greater efficiency in enforcement of the act. Subsequently, all powers exercisable by the Central Government except powers conferred by SECTION 23 (POWERS TO MAKE RULES) have been delegated to the state governments.

DIRECTORATE OF ADVERTISING AND VISUAL PUBLICITY

ADVERTISING AND VISUAL PUBLICITY. The Directorate of advertising and Visual Publicity (DAVP) is one of the Central Agencies of the

Government for publicising policies, programmes, achievements of Various Ministries (except Railways), Departments and Autonomous Bodies through widest-range of Communication Media such as Press Advertising, printed publicity material like Hooardings, Kiosks, Cinema Slides, Wall-paintings and Transit Advertising, Audio-visual Media such as Radio and TV Commercials, Short Advertisement Films and Photographic Exhibitions. It is one of the Biggest Advertising Agency in the Country using nearly 3100 Newspapers and Periodicals for Press Advertising. To facilitate intensive as well as extensive coverage for its Publicity Campaigns, the DAVP has Two Regional Offices at Bangalore and Guwahati and 40 Field Exhibition Units including Seven Mobile Vans, besides two Regional Distribution Centres at Calcutta and Madras.

Its exhibitions are designed and fabricated for display in the Country. It has one of the Largest Direct Mail Services and can reach more than 15.53 lakh addresses all over the country.

MULTI-MEDIA PUBLICITY

To inform, educate and motivate the people to participate in the National Programmes for development and on matters of minimum and large-term interest, DAVP launches Multi-Media Publicity Campaigns. During 1989-90, Major Publicity Campaigns were Organised on Important Socio-economic Themes such as National Integration and Communal Harmony, Health and Family Welfare, Environment, conservation of energy and power, uplift of the weaker sections of society and removal of Social and Economic Evils.

Radio and TV Commercials, Exhibitions and Outdoor Publicity Media were used to support these campaigns in the rural and semi-urban areas. DAVP was successful in high-lighting the importance of 'Girl Child' through its IPP Calendar-1990. Publicity support was also given to National and International Events like 'Teacher's Day' 'SAARC Year of Girl Child', 'Literacy Year', 'World Health Day', 'Republic Day', 'Birth Centenaries of Bharat Ratna Dr. Bhimarao Ambedkar and Mr. Gopi Nath Bardoloi.

A vigorous publicity campaign was undertaken to bring general awareness among the masses of the facts and additional burden on the Country's Economy arising out of recent Gulf Crisis and Oil Crisis and seeking their cooperation in meeting this crisis. In view of specifically disturbed areas of Punjab, DAVP continued to sustain its Publicity Campaign carrying the message 'Sada Sangha Punjab'—United we rise, Divided We Fell' during the year. A special campaign was also launched to mark the Centenary Celebrations of Well-known national personalities as Dr. Bhimrao Ambedkar and Gopi Nath Bardoloi. Extensive publicity was undertaken to motivate the Family Welfare Progammes. The major thrust of publicity was on not only to intensify and enlarge the scope of Family Welfare in the Country but also to remove certain misconceptions about Family Planning and bring out changes in favour of the Small Family Norm in respect of sons and daughters. Publicity campaigns for the control of diseases like 'Diarrhoea', 'Malaria' and AIDs were further intensified. Booklets, Folders, Poster and brochures were printed to focus public attention on women and child development, immunisation, spacing of children, safe motherhood and basic health services. Press Publicity was also undertaken on behalf of the Ministry of Defence to motivate the youth of the Country to join the Armed Forces.

A special campaign was initiated to inculcate a sense of Nation Pride among people of weaker sections of society. A number of booklets and folders detailing the measures taken by the Government to usher a New Social and Economic Order in the Country Based on Equality and Social Justice particularly for the Downtroden Depressed Groups such as Scheduled Caste and Scheduled Tribes were printed.

EXHIBITION

The Directorate organised 360 exhibitions through out the country during 1989-90, especially in rural and remote areas, prominent fairs, festivals, social and religious meets. Our exhibitions were visited by over 1.06 crore visitors. Out of these, over 62 lakh visitors were from the rural areas. The major themes covered by these exhibitions were National integration and communal harmony, Family Welfare, all-round development in the Country in the last few decades, various schemes implemented by the Government for the upliftment of the Scheduled Caste, Scheduled Tribes, Weaker Sections and Women and Child Development. The titles under which these exhibitions were organised were 'Ek Rashtra Ek Pran', 'India Today', 'Women and Child Development', 'The Turning Point' and 'Hamara Desh'.

To mark the Birth Centenary Celebrations of Bharat Ratna Dr. Bhimarao Ambedkar, an exhibition of his life, works, achievements and contribution towards development of weaker sections of society was produced and put up for display. DAVP designed and displayed an exhibition at Guwahati on the life and works of 'Gopi Nath Bardoloi' to mark his birth centenary celebrations. Another which got the public attention was 'Towards Better Future', put up for display at the IITE-1990 at New Delhi during November, 1990. DAVP produced its new exhibition on 'Girl Child' and put up for display at Raipur in Madhya Pradesh to mark the SAARC Year of the 'Girl Child'.

PRESS ADVERTISEMENTS

DAVP released 19,426 advertisements during the year 1989 to various Newspapers and Journals on behalf of various Ministries (except Railways) and departments of the Government. A large number of autonomous bodies and public sector undertakings also channalise their advertisements through DAVP. A balanced and an equitable placing of advertisements is aimed at keeping in view the Advertising Policy of the Government, publicity requirements and availability of funds. DAVP maintains a panel of newspapers in almost all the Indian languages for release of Government Advertisements. Presently, about 3,300 publications are on DAVP's Panel. An annual contract is entered with the individual newspaper for release of Press Advertisements. There is a separate list of newspapers to which the UPSC Advertisements are released. This list also contains newspapers in almost all Indian Languages.

PRINTED PUBLICITY

DAVP brings out publicity literature in English, Hindi and 11 Regional Languages namely Assamese, Bengali, Gujarati, Kannada, Malayalam, Marathi, Oriya, Punjabi, Tamil, Telugu and Urdu. During April, 1889 to March, 1990—nearly Two Crore Copies of Printed Publicity items like Booklets, Folders, Posters, etc. were produced for free distribution. Some of the important Booklets/Brouchures/Folders brought out in the current year include 'Workers's Participation in Management', 'Democratic Dimentions of the Right to Information', 'Jobs for Millions—Some issues New Legislations—Impetus for Change; 'New Thrust—New Directions', and Prasar Bharati Act-1990 as passed by Parliament. Nineteen Important speeches of the Prime Minister, 19 of the Former have been printed. As regards Ram Janambhoomi issue a number of advertisements were released highlighting our secular ideals and the need to preserve Secular Harmony. A folder—'India Fcts' containing statistical information about India's Progress in Various Fields over the years was also printed.

MASS MAILING

The Mass Mailing Wing of the Directorate distributed 2.01 crore items of Printed Publicity Material during 1989-90. Distribution was done from the headquarters at New Delhi and regional distribution centres at Calcutta and Madras, either through direct to individuals/institutions or by bulk supply to organisations for further distribution in their respective areas. The Mailing library of the DAVP consists of 15.53 (approx.) lakh direct mail addresses spread over 5.42 (approx.) categories including rural category like Primary/Middle school, Panchayats, Post Offices, Block Developmetn Offices, Rural Bank Branches and Cooperative Societies.

MODES OF PUBLICITY

Publicity for various campaigns is also carried out through the commercial channels of All India Radio and Doordarshan as well as Outdoor Media like Wall Paintings, Hoardings, Cinema Slides, Kiosks, Bus/Train/Tramcar Panels, Tin Stencils, Banners and Stickers, etc. During 1989-90, the directorate put out as many as 1914 Radio Spots, Jingles and Sponsored Programmes for broadcast on different themes. In addition, 114 Video Spots/Video Quickies and Motivational Programmes covering different subjects of National Importance were produced in various languages for telecast over the Commercial Channels of Doordarshan as well as to meet the publicity needs of the client Department/Ministries. Total number of broadcast and telecasts was 26,725 and 320 respectively.

DAVP organised a three-day Workshop on 'Printing Technology' from 24 July to 26 July, 1990 to arrange exposure to the latest technology in printing for the benefit of the Officers concerned with the Print Media in DAVP and other Media Units.

FIELD PUBLICITY

The Directorate of Field Publicity is the largest rural-oriented interpersonal communication medium in the Country which seeks to project the policies and programmes of the Government by bringing its men and material face-to face with the people. It endeavours to inform them of the plans and schemes formulated for their benefit. The Field Publicity Personnel work in widely diverse areas. On an average, One Field Publicity Unit has to cover nearly 27 lakh people living in 2,308 villages spread over an area of 11,600 sq Kms.

The basic objectives of DEP are to secure involvement of people in development programmes, to foster National Cohesion and communal harmony and to facilitate smooth transformation especially in Backward, Remote and Tribal Areas. *The directorate is a two-way channel of communication.* While on the one hand, it disseminates information and motivates people, on the other it gathers spontaneous feedback on the basis of face-to-face communication and transmits the same to the Concerned Ministries and other Media Units in the form of "Public Reaction Report", "Special Situation Reports" and "Success Stories". The units seek to achieve the basic objectives of development through skillful synthesis between the Traditional and Modern Forms of Communication and judicious use of various media techniques like films, song and drama programmes, photo exhibitions, display and distribution of print material, conducted tours of opinion leaders, public meetings, group discussions, seminars, symposia debates, essay competitions, etc. Apart from certain basic policies of the Government, the field units also conduct Publicity Campaigns on themes like National Integration, Communal Harmony, Health and Family Welfare, Role of Public Sector and Socio-economic Programmes related to evil of dowry, untouchability, prohibition, status of women, etc. The DFP Units also utilise important occasions, National Events, fairs and festivals for coverage. The directorate functions at three levels: (a) Headquarters in New Delhi; (b) Regional Offices at State Capitals/important Cities/Towns; and (c) Field Publicity Units. The present network of the directorate has 22 Regional Offices and 257 Field Publicity Units. Of these, 72 units concentrated their activities in the border areas and 30 carry out intensive publicity on Family Welfare in the areas where population growth rate is comparatively high.

During January 1, 1990 to September 30, 1990, the directorate organised

44,782 Film Shows, 29,811 Photo Exhibitions, 5,933 Song and Drama Programmes, 45,890 group discussions and 5,011 other programmes which include seminars, symposia, debates, elocution contests, etc. Total audience covered during the period was nearly five crore.

SONG AND DRAMA DIVISION

Song and Drama Division which was set up in 1954 utilises the Traditional, Folk and Contemporary Stage forms like Puppets, Plays, Dance-dramas, Ballets, Ballads, Harikathas for the purpose of social communication projecting the developmental activites. It has the advantage of an instant rapport with the people and the flexibility incorporate new ideas and convictions. The division has 43 Departmental Troupes including the Central Drama Troupe. Besides, it has about 575 registered parties consisting of eminent performers in various Performing Arts all over the Country to organise Programmes of National Importance.

In 1976, Light and Sound Wing of the division was established at Delhi. Second such unit was set up at Bangalore during 1981-81. The programme of the wing is an *'art of theatre panosonic'* which has proved very successful because more than 10,000 spectators can witness a performance without any loss of audio or visual quality of the performance at a time. It has presented programmes on Eminent Persons like Guru Nanak Dev, Subramania Bharati, Bahadur Shah, Begum Hazarat Mahal, Bharat Rattan Indira Gandhi and Modern Themes like Sahar Hogi on Family Welfare.

Sound and Light programmes on Krishan Dev Rai and 'Akbar' on their life and times were also presented.

The division set up a Tribal Centre at Ranchi during 1981 which covers states of Madhya Pradesh, Bihar and Orissa in order to bring the tribals of these states into the National Mainstream.

Its Armed Forces Entertainment Wing was established in 1967 with a view to entertaining jawans posted in forward areas. Boarder Publicity Troupes stationed at International Boundaries of the Country perform for village folk living in these remote areas.

TRAINING

Training in Mass Communication is available in a number of institutions in the Country. There are Twenty-five Universities which offer Degree/ Diploma Certificate Courses in the field.

STAFF TRAINING INSTITUTE (PROGRAMME)

Staff Training Institute (Programme) of All India Radio, New Delhi, imparts in-house training to Programme and Administrative Personnel and Guest Trainees from Foreign Broadcasting Organisations.

Special efforts are made to train programmers in the planning, production and management techniques. On an average, 36 courses of various kinds are conducted in a year in order to update and enrich the knowledge and skill of the Programme Personnel.

The institute has Six Regional Training Centres at Hyderabad, Shillong, Lucknow, Ahmadabad, Cuttack and Trivandrum. The Regional Training Centres cater to the training needs of the Announcers, Transmission Executives, Production Staff and also Programme Executives.

STAFF TRAINING INSTITUTE (TECHNICAL)

Staff Training Institute (Technical) has the responsibility of imparting in-service training to the Engineers of AIR and Doordarshan. The institute conducts Basic Induction Courses for the new entrants and also arranges Refresher Courses and Specialised Task/Equipment-oriented Courses for various categories of staff to keep them abreast with the up-to-date technology implemented in AIR and Doordarshan Networks. Trainees from Several Countries are accommodated in the above courses under SCAAP, ITEC, Colombo Plan and other Technical Cooperation Schemes. During 1989, 55 training courses were conducted imparting training to about 900 persons.

FILM AND TELEVISION INSTITUTE OF INDIA

The Film and Television Institute of India (FTII) located at Pune imparts technical training in the Art of Film making and provides In-service Training to the Personnel of Doordarshan.

The Institute conducts Three-year Specialisation Courses in (1) Motion Picture Photography, (2) Film Direction and (3) Sound Recording and Sound Engineering with One-year Integrated Training. The course in Film Editing is of two years' duration with one year's of Integrated Training. During 1989-90, there were 93 students on the rolls of the Film Wing.

Television training is imparted in (1) TV Programme Production, (2) Studio Technical Operations, (3) TV Films, and (4) TV Graphics and Design.

In the 32nd, 33rd and 34th courses in Basic TV Production and Technical Operations conducted during 1989-90, 257 trainees from various TV Stations in the Country participated.

Apart from these courses, Short Duration Specialisation Courses were conducted in 1989-90 These were in: (1) Course in Staging and Design for Television—conducted by FTII and AIBD, Kuala Lumpur (2) Film and Television Production Orientation for IIS Probation Officers from IIMC, New Delhi (3) Course for Lighting for Colour Television (4) Workshop for Set Designing for TV Production (5) Music for TV Programmes and (6) Music Balancing Operations for Audio Engineers. 72 participants took training in the above Specialisation Courses.

PARTICIPATION IN FILM FESTIVLS

The institute regularly centre the student-films in National and International Film Festivals. The Film 'Akshram' by Shri G.R. Menon was selected in the Competition Section of the 8th International Youth Film Festival, Turin, Italy (9th December 1990), for the 37 International Short Film Festival at Oberhausen, the Film 'With, Little Rhyme and No Reason' by Saurabh Vanzara was selected in the Competition Section of the Festival; for the 38 National Film Festival, the Film 'Aamukh' by Saurabh Vanzara won the National Award for the Best Short Fiction Film and for the International Short Film Festival, Dhaka, 1991, Bangladesh, Nineteen FTII Student-films Made by its famous Ex-students and FTII Ex-students from Bangladesh were sent on invitation.

FILM APPRECIATION COURSE, 1990

A One-month Course in Film Appreciation was jointly organised by the Film and Television Institute of India and the National Film Archive of India from 14 May to 14 June, 1990. Sixty Eight Participants comprising Teachers, University Professors, Research Workers, Journalists, Film Scoeity and Media Officials attended the Course.

INDIAN INSTITUTE OF MASS COMMUNICATION

The Indian Institute of Mass Communication (IIMC) was set up in August, 1965, as a *centre for Advanced Study in Mass Communication.* It is an autonomous body registered under the Indian Societies Registration Act. The institute is managed by a society which is reconstituted every two years. It derives funds from the Ministry of Information and Broadcasting.

The institute conducts Two Regular Training Vourses and Four Regular Diploma Courses. They are: (1) Orientation Course for Officers of the Indian Information Services; (2) Broadcast Journalism Course for the personnel of All India Radio and Doordarshan; (3) Post-Graduate Diploma Course in Journalism; (4) Post-graduate Diploma Course in Advertising and Public Relations; (5) Post-Graduate Diploma in News Agency Journalism (Hindi), and (6) Diploma Course in News Agency Journalism for Non-Aligned Countries. In addition, to the Indian Students, the candidates sponsored under various Government of India Technical Assistance Schemes are also admitted to the Post-Graduate Diploma Course in Journalism. The Diploma Course in News Agnecy Journalism is for Working Journalists from Non-Aligned Countries but also nominees of the Two National News Agencies are also admitted to this course. The institute also conducts a number of Short-term Courses in areas of special interest.

The institute has fairly good facilities for practical training in Carious Branches of Communication. Besides a Printing Press, the institute has Well-equipped Sound and TV Studio and other Audio-visual Facilities. In order to keep pace with the developments in the Field of Communication especially in the area of Computer-based Editing and Publishing, the institute acquired 23 Personal Computers (16 PC XTs, 6 PC ATs and IPC 386) and Desk Top Publishing System to provide facilities to students in Electronic Editing and Computer-based Graphic, Lay-out, Design and Publication. There is a Fully equipped Computer Class Room where Electronic Editing may be practised. Word Processing, Data Base Management and Electronic Spread-Sheet can be learnt along with other Computer Languages.

IIMC has a Well-equipped Library and a Documentation Unit. The Institute brings out a Quarterly Journal *Communicator* in English and *Sanchar Madhyam* in Hindi besides other publications.

The research and evaluation departments contribute towards the understanding of the communication process, its practices and their wider, social, economic and political implications within the Indian Context.

12 Basic Economic Data

INDIA is rich in natural resources and manpower. These resources have, however, not been exploited fully and are capable of greater utilisation. Indian Economy is still predominantly agricultural. Agriculture has acquired a remarkable resilience in the last decade. About one-third of the National Income is derived from agriculture and allied activities employing about two-third of the working force. Since 1947, the national endeavour has been to diversify economy.

BASIC ECONOMIC DATA

NATIONAL AND PER CAPITA INCOMES

National income is defined as the sum of incomes, accruing of factors of production supplied by normal residents of the country before deduction of direct taxes. It is identically equal to Net National Product at Factor Cost. Table 12.1 gives estimates of National and Per Capita incomes at current and 1980-81 prices. Table 12.2 gives National Product and related aggregates at current prices. Table 12.3 gives performance of the public sector. Table 12.4 gives private final consumption expenditure, net domestic saving and capital formation since 1980-81.

CATEGORIES OF WORKERS

For 1981 census, population was divided into main workers (classified into nine broad industrial categories), marginal workers and non-workers. In 1971 census also, population was divided into workers and non-workers. There were nine categories of workers, shown in table 12.5. It shows number of workers and non-workers in rural and urban areas as on 1 March, 1981, as compared to those on 1 April, 1971. Employment in the Organised Sector has been shown in Table 12.6

UNEMPLOYMENT

Number of persons on the 'Live Registers' of Employment Exchanges gives an idea of the trend of unemployment subject to certain limitations. Employment Exchanges cover mainly urban areas. Registration with the Employment Exchanges being voluntary, not all the unemployed register their names in exchanges. Further, some registrants already employed, get registered for better employment. *Number of job-seekers on the 'Live*

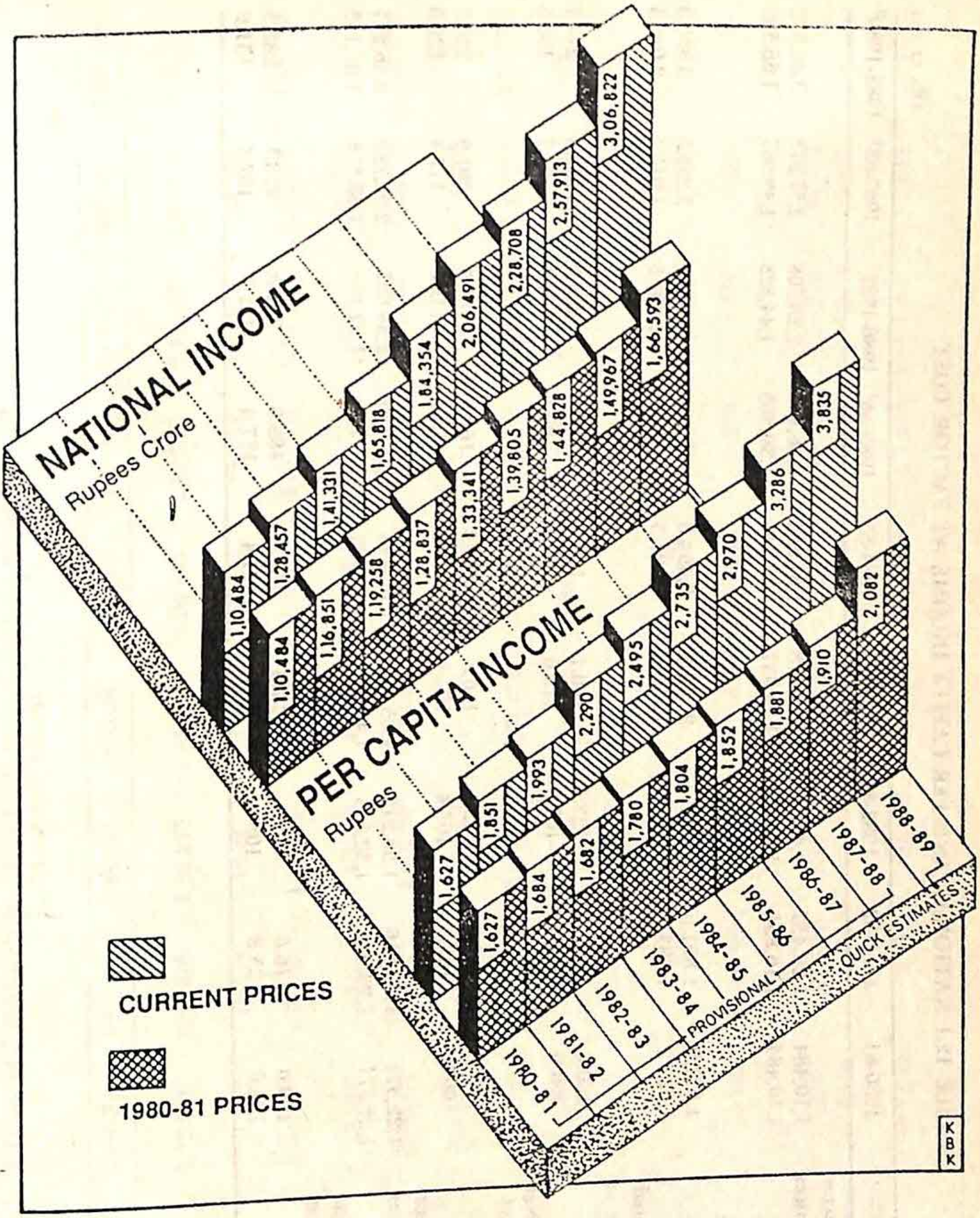
NATIONAL INCOME
Rupees Crore
1,10,484
1,28,457
1,41,331
1,65,818
1,84,354
2,06,491
2,28,708
2,57,913
3,06,822
1,10,484
1,16,851
1,19,258
1,28,837
1,33,341
1,39,805
1,44,828
1,49,967
1,66,593
PER CAPITA INCOME
Rupees
1,627
1,851
1,993
2,290
2,495
2,735
2,970
3,286
3,835
1,627
1,684
1,682
1,780
1,804
1,852
1,881
1,910
2,082
1980-81
1981-82
1982-83
1983-84
1984-85
1985-86
1986-87
1987-88
1988-89
PROVISIONAL
QUICK ESTIMATES
▨ CURRENT PRICES
▩ 1980-81 PRICES
KBK

TABLE 12.1 NATIONAL AND PER CAPITA INCOME AT FACTOR COST

(Rs crore)

Item	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86[1]	1986-1987[1]	1987-88[1]	1988-1989[2]
Net National Product at Factor Cost (Rs crore at current prices	1,10,484	1,28,457	1,41,331	1,65,818	1,84,354	2,06,491	2,28,708	2,57,913	3,06,822
at 1980-81	1,10,484	1,16,851	1,19,258	1,28,837	1,33,341	1,39,805	1,44,828	1,49,967	1,66,593
Prices Capita Net National Product (Rupees) at current prices	1,627.2	1,851.0	1,993.4	2,290.3	2,494.6	2,735.0	2,970.2	3,285.5	3,835.3
at 1980-81 prices	1,627.2	1,683.7	1,682.1	1,779.5	1,804.3	1,851.7	1,880.9	1,910.4	2,082.4
Index number of Net National Product with 1980-81 as base at current prices	100.0	116.3	127.9	150.1	166.9	186.9	207.0	233.4	277.7
at 1980-81 prices	100.0	105.8	107.9	116.6	120.7	126.5	131.1	135.7	150.8
Index number of per capita Net National Product with 1980-81 as base at current prices	100.0	113.8	122.5	140.8	153.3	168.1	182.5	201.9	235.7
at 1980-81 prices	100.0	103.5	103.4	109.4	110.9	113.8	115.6	117.4	128.0
Gross National Product at factor cost (Rs crore) at current prices	1,22,571	1,42,916	1,58,217	1,85,047	2,06,445	2,32,730	2,58,637	2,91,789	3,46,277
at 1980-81 prices	1,22,571	1,29,639	1,32,853	1,43,306	1,48,789	1,56,147	1,62,188	1,68,378	1,86,143
Index number of Gross National Product with 1980-81 as base at current prices	100.0	116.6	129.1	151.0	168.4	189.9	211.0	238.1	282.5
at 1980-81 prices	100.0	105.8	108.4	116.9	121.4	127.4	132.3	137.4	151.9

1. Provisional estimates.
2. Quick Estimates.

TABLE 12.2 NATIONAL PRODUCT AND RELATED AGGREGATES

(at current prices)

(Rs. crore)

Item	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86[1]	1986-87[1]	1987-88[1]	1988-89[2]
a) Gross National Product at Factor Cost	1,22,571	1,42,916	1,58,217	1,85,047	2,06,445	2,32,730	2,58,637	2,91,789	3,46,277
b) Add Indirect Taxes less subsidies	13,586	16,544	18,737	20,866	22,810	28,444	32,919	38,145	42,262
c) Gross National Product at market prices (a+b)	1,36,157	1,59,460	1,76,954	2,05,913	2,29,255	2,61,174	2,91,556	3,29,934	3,88,539
d) Less consumption of Fixed Capital	12,087	14,459	16,886	19,229	22,091	26,239	29,929	33,876	39,455
e) Net National Product at market prices (c-d)	1,24,070	1,45,001	1,60,068	1,86,684	2,07,164	2,34,935	2,61,627	2,96,058	3,49,084
f) Less Net Factor Income form abroad	(+) 345	(+) 40	(-) 634	(-) 944	(-) 1,424	(-) 1,429	(-) 1,805	(-) 2,619	(-) 2619
g) Net Domestic Product at market prices (e-b)	1,23,725	1,44,961	1,60,702	1,87,628	2,08,588	2,36,364	2,63,432	2,98,677	3,51,703
h) Net Domestic Product at factor cost	1,10,139	1,28,417	1,41,965	1,66,762	1,85,778	2,07,920	2,30,513	2,60,532	3,09,441
i) Less income from entrepreneurship and property accruing to Government's Administrative Departments	554	687	1,425	1,153	1,936	2,441	3,707	4,027	—
j) Less saving of non-departmental enterprises	(-) 820	(-) 46	504	471	943	1,254	1,530	2,101	—
k) Income from Domestic Product accruing to private sector (h-i-j)	1,10,405	1,27,776	1,40,036	1,65,138	1,82,899	2,04,225	2,25,276	2,54,404	—
l) Add National Debt Interest	1,524	1,911	2,713	3,739	5,008	6,115	7,592	9,555	—
m) Add Net Factor Income from abroad	(+) 345	+ 40	(-) 634	(-) 944	(-) 1,424	(-) 1,429	(-) 1,805	(-) 2,619	- 2619

TABLE 12.2 NATIONAL PRODUCT AND RELATED AGGREGATES

(at current prices)

(Rs. crore)

Item	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86[1]	1986-87[1]	1987-88[1]	1988-89[2]
n) Add current transfers from Government's Administrative Departments	2,835	3,370	4,008	4,640	5,733	6,994	8,697	1,0023	—
o) Add other 'current transfers' from the rest of the world (net)	2,257	2,221	2,527	2,774	3,101	2,821	2,976	3,499	—
p) Private Income (k+l+m+n+o)	1,17,366	1,35,318	1,48,650	1,75,347	1,95,317	2,18,726	2,42,736	2,74,862	—
q) Less saving of Private Corporate Sector, net of retained earnings of Foreign Companies	584	495	568	390	795	1,467	462	399	—
r) Less Corporation Tax	1,378	1,970	2,185	2,493	2,556	2,865	3,160	2,433	—
s) Personal Income (p-q-r)	1,15,404	1,32,853	1,45,897	1,72,464	1,91,966	2,14,394	2,39,114	2,71,030	—
t) Less Direct Taxes Paid by house-hold	2,197	2,491	2,650	2,862	3,250	3,709	4,168	4,434	—
u) Less miscellaneous receipts of Government's Administrative Departments	303	389	479	506	900	1,267	1,183	1,224	—
v) Personal Disposable income (s-t-u)	1,12,904	1,29,973	1,42,768	1,69,096	1,87,816	2,09,418	2,33,763	2,65,372	31,61,187

Note: Available data does not permit separation of fees, fines, etc., paid by producers and to that extent Personal Disposable Income is under estimate.

1. Provisional estimates.
2. Quick Estimates—estimates for all the aggregates not available.

TABLE 12.3 PERFORMANCE OF PUBLIC SECTOR
(at current prices)

Item	1980-81	1981-82	1882-83	1983-84	1984-85	1985-86[1]	1986-87[1]	1987-88[1]	1988-89[2]
Gross Domestic Product	1,22,226	1,42,876	1,58,851	1,85,991	2,07,869	2,34,159	2,60,442	2,94,408	3,48,896
Public	24,171	29,857	36,240	42,241	49,147	58,326	68,892	79,805	91,985
Private	98,055	1,13,019	1,22,611	1,43,750	1,58,722	1,75,833	1,91,550	2,14,603	2,56,911
Share of public to total (per cent)	19.8	20.9	22.8	22.7	23.6	24.9	26.4	27.1	26.4
Gorss Domestic Saving	28,773	33,457	34,441	40,438	43,148	53,683	57,291	65,309	82,044
Public	4,654	7,254	7,822	6,781	6,526	8,457	7,981	6,861	6,346
Private	24,119	26,203	26,619	33,657	36,622	45,226	49,310	58,448	75,698
Share of public to total (per cent)	16.2	21.7	22.7	16.8	15.1	15.8	13.9	10.5	7.7
Gross Domestic Capital Formation[3]	31,016	41,036	41,704	46,074	51,653	66,729	71,308	76,140	95,380
Public[4]	14,000	17,735	20,449	22,026	26,493	30,875	35,422	35,404	41,125
Private	17,016	23,301	21,255	24,048	25,160	35,854	35,886	40,736	54,255
Share of public to total (per cent)	45.1	43.2	49.0	47.8	51.3	46.3	49.7	46.5	43.1
Final consumption expenditure	1,12,167	1,28,811	1,42,963	1,67,225	1,85,393	2,05,226	2,32,468	2,63,561	3,02,856
Public Administration	13,084	15,355	18,272	21,141	24,352	29,174	34,625	41,034	46,361
Private households and non-profit institutions	99,083	1,13,456	1,24,691	1,46,084	1,61,041	1,76,052	1,97,843	2,22,527	2,56,495
Share of public to total (per cent)	11.7	11.9	12.8	12.6	13.1	14.2	14.9	15.6	15.3

1. Provisional estimates.
2. Quick Estimates.
3. Unadjusted for errors and ommissions.
4. Including net purchase of second-hand physical assets.

TABLE 12.4 PRIVATE CONSUMPTION, SAVING AND CAPITAL FORMATION

Year	Private final consumption expenditure in domestic market (Rs crore)		Per capital private final consumption expenditure in domestic market (Rs crore)		Net domestic saving (Rs crore)	Rate of Saving (per cent)	Net domestic capital (Rs crore)		Rate of capital formation (per cent)
	At current prices	At 1980-81 prices	At current prices	At 1980-81 prices	At current prices	At current prices	At current prices	At 1980-81 prices	At current prices
1980-81	99,083	99,083	1,459	1,459	16,686	13.5	18,780	18,780	15.2
1981-82	1,13,456	1,03,574	1,635	1,492	18,998	13.1	21,609	19,449	14.9
1982-83	1,24,691	1,06,604	1,759	1,504	17,555	10.9	20,121	16,935	12.5
1983-84	1,46,084	1,14,606	2,018	1,583	21,209	11.3	23,726	17,646	12.6
1984-85	1,61,041	1,19,071	2,179	1,611	21,057	10.1	24,349	16,198	11.7
1985-86	1,76,052	1,23,435	2,332	1,635	27,444	11.6	33,678	21,232	14.2
1986-87	1,97,843	1,29,151	2,569	1,677	27,362	10.4	33,717	19,205	12.8
1987-88	2,22,527	1,34,972	2,835	1,719	31,433	10.5	38,258	20,473	12.8
1988-89	2,56,495	1,46,261	3,206	1,828	42,589	12.1	54,089	26,826	15.4

1. Provisional estimates.
2. Quick Estimates.

TABLE 12.5 POPULATION BY CATEGORIES OF WORKERS AND NON-WORKERS

(In crore)

	Rural	Urban	Total
1981 Census			
Total Population[1]	52.55 (43.91)	15.97 (10.91)	68.52 (54.82)
Total marginal[2]	2.09	0.12	2.12
Total workers[2]	17.64[3] (14.85)	4.61[3] (3.20)	22.25[3] (18.05)
(i) Cultivatiors	9.02 (7.66)	0.23 (0.17)	9.25 (7.83)
(ii) Agricultural labourers	5.27 (4.56)	0.28 (0.19)	5.55 (4.75)
(iii) Livestock, forestry and fishery	0.42 (0.38)	0.08 (0.05)	0.50 (0.43)
(iv) Mining and quarrying	0.08 (0.06)	0.05 (0.03)	0.13 (0.09)
(v) Manufacturing and processing	1.15 (0.82)	1.36 (0.89)	2.51 (1.71)
(vi) Construction	0.18 (0.11)	0.19 (0.11)	0.37 (0.22)
(vii) Trade and commerce	0.49 (0.36)	0.92 (0.64)	1.41 (1.00)
(viii) Transport, storage and communication	(0.12)	(0.32)	(0.44)
(ix) Other services	0.84 (0.78)	1.07 (0.80)	1.91 (1.58)
Non-workers[2]	31.03 (29.06)	11.04 (7.71)	42.07 (36.77)

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1. Includes the projected population of Assam, where the census was not held in 1981 owing to disturbed conditions and excludes that portion of Jammu and Kashmir which is under the illegal occupation of Pakistan and China.
2. Excludes Assam and that portion of Jammu and Kashmir which is under the illegal occupation of China and Pakistan.
3. Relates to the main workers of the 1981 census which are comparable with the total workers of the 1971 census. In the 1981 census, workers were classifed into main workers and marginal workers and non-workers.

Figures in parenthesis relate to the 1971 census.

TABLE 12.6 EMPLOYMENT IN ORGANISED SECTOR

(In lakh)

	March 1976	March 1977	March 1978	March 1979	March 1980	March 1981	March 1982	March 1983	March 1984	March 1985	March 1986	March 1987	March 1988	March 1989(P)
Public Sector														
Central Government	30.47	30.82	30.96	31.34	31.78	31.95	32.49	32.66	33.11	33.29	33.46	33.50	33.8	33.89
State Government	48.97	50.20	51.60	53.09	54.78	56.76	58.53	60.38	61.54	62.80	64.73	66.66	67.8	68.90
Quasi Government	33.92	36.75	39.29	41.70	43.43	45.76	48.12	50.40	52.74	54.97	56.79	57.95	59.48	59.98
Local Bodies	19.85	19.89	20.15	20.63	20.80	20.37	20.33	21.11	21.30	21.64	21.90	22.14	22.11	22.38
Total	133.22	137.66	142.00	146.76	150.78	154.84	159.46	164.56	168.69	172.69	176.83	180.25	183.20	185.16
Private Sector (non-agricultural)														
Larger establishment (employing 25 or more workers)	61.13	61.37	63.22	64.65	64.84	66.00	67.33	67.29	65.26	64.79	65.47	65.32	65.44	66.06
Smaller establishments (employing 10 to 24 workers)	7.31	7.30	7.21	7.42	7.43	7.95	8.14	8.24	8.19	8.31	8.25	8.31	8.47	8.63
Total	68.44	68.67	70.43	72.08	72.27	73.95	75.47	75.52	73.45	73.09	73.73	73.63	73.91	74.70
Grand Total	201.65	206.34	212.43	218.84	223.05	228.79	234.93	240.08	242.14	245.78	250.56	253.88	257.12	259.86

P. Provisional.

Note: In some cases totaly may not tally due to rounding-off.

Registers' of Employment Exchanges increased from 197.53 lakh as on 31 December, 1982 to 343.68 lakh on 30 September, 1990. Table 12.7 gives registrations, vacancies, placements and job-seekers on the 'Live Register' for the period 1980-90 (Jan-September).

TABLE 12.7 REGISTRATIONS, VACANCIES, PLACEMENTS AND JOB-SEEKERS ON THE 'LIVE REGISTER'

(Lakh)

Year	Number of employment	Registerations	Vacancies notified	Placements	'Live Register' (on 31, Dec.)	Percentage increase in 'Live Register' over previous year
1980	638	61.58	8.38	4.78	162.00	13.0
1981	663	62.77	8.97	5.04	178.38	10.1
1982	692	58.63	8.20	4.73	197.53	10.7
1983	726	67.56	8.26	4.86	219.53	11.1
1984	745	62.20	7.08	4.07	235.47	7.3
1985	800	58.21	6.75	3.88	262.70	11.6
1986	821	55.35	6.23	3.51	301.31	14.7
1987	835	60.12	6.01	3.34	302.47	0.4
1988	840	59.63	5.43	3.28	300.50	0.7
1989	849	65.76	6.00	2,89	327.76	9.1
1990 (January-September)	851	49.87	3.78	2.02	343.68	4.9

Note: Total may not tally due to rounding-off.

1. Including University Employment Information and Guidance Bureaux.

NATIONAL SAMPLE SURVEY ORGANISATION

The National Sample Survey (NSS) was set-up in 1950 with a programme of conducting large-scale surveys to provide data for National Income Estimation and for planning and policy formulation. It has since grown into one of the largest organisations of its kind in the World. Today it is a major fact-finding body and occupies a unique position in the Nation's Statistical System. Over the years, it has enlarged and diversified data-base, especially in areas vital for development planning. NSS carries out annually socio-economic surveys covering various facets of population. It also undertakes field work of Annual Survey of Industries and carries out sample checks of area and yield of crops to improve quality of estimation of agricultural production prepared by the states. Its total number of personnel is now about 6,000 having over 170 offices spread through out the country.

NSS was reorganised in 1970 and all aspects of its work were entrusted to a single government agency, National Sample Survey Organisation (NSSO) under overall direction of a governing council with requisite independence and autonomy in the matter of collection, processing and publication of data. Besides its Chairman, the council comprises five academicians, six officials of 'user departments' in Centre and states and six functionaries of the Department of Statistics.

It is headed by a chief Executive Officer who is also the Member Secretary of the council. It has functional divisions, namely; (i) survey, design and research, (ii) field operations, (iii) data processing and (iv) data analysis and publication. Each division is under the charge of a director assisted by a team of statisticians and supporting staff.

The subject programme of socio-economic surveys conforms to a well-defined cycle of surveys extending over a period of ten years. These include surveys on (i) population, births, deaths and fertility, (ii) land holdings, livestock holding and debt and investment, to be repeated once in ten years, (iii) employment and unemployment and consumer expenditure, (iv) non-directory manufacturing establishments (NDME) and Own Account Manufacturing Enterprises (OAME), and (v) Non-Directory Trading Establishments (NDTE) and Own Account Trading Enterprises (OATE), to be repeated once in five years. Thus, in a ten year period, eight years are fixed for the specific subject groups and the remaining two years are meant for other special surveys asked for by user ministries. Surveys on other subjects of interest to users are either integrated with one of the fore-going specific subject group surveys or taken in a year earmarked for other special surveys.

The Central Sample covers about 9,000 villages and 5,000 urban blocks at the first stage from which a sample of about 1.5 lakh households is selected. States and union territories participate in socio-economic surveys atleast on an equal matching basis.

Collection of data for Annual Survey of Industries (ASI) is a regular annual feature of its activities and is being conducted under statutory provisions of the Collection of Statistics Act, 1953, and Collection of Statistics (Central) Rules, 1959, covering all factories registered under Section 2M (i) and 2M(ii) of the Factories Act, 1948, electricity undertakings registered with Central Electricity Authority and bidi and cigar establishments registered under the Bidi and Cigar Workers (Conditions of Employment) Act, 1966.

Data collected under ASI relates to capital structure, employment and emoluments, consumption of fuels and lubricants, raw material and other inputs, outputs, value added by manufactured labour statistics, housing statistics and other characteristics of factories/establishments to meet requirements of the Government and outside. ASI 1988-89 was taken up from July, 1989, with a gross allotment of 61913 factories.

The role of NSSO in agricultural statistics is to provide technical guidance to states for conducting crop estimation survey and to keep a continuous watch on quality of agricultural statistics collected by them with a view to suggesting measures for their improvement.

A scheme for improvement of crop statistics was introduced in 1973-74 with a view to locating through joint efforts of Central and state authorities, deficiencies in the system of collection of crop statistics and to suggest remedial measures. Under the scheme, sample checking of primary field work relating to area enumeration and area aggregation in approximately 5,000 villages and supervision of about 15,000 crop-cutting experiments is undertaken in every agrigultural year by NSSO. States also participate in this programme on a matching basis.

The 45th round of NSS devoted to a survey on Non-Directory and Own-Account Manufacturing and Repairing Enterprises was taken up from July, 1989, and completed in June, 1990. The survey was designed to provide information on nature of activity, input and output, employment and unemployment, inventory of fixed assets and working capital, outstanding loans, terms of purchase of important raw material, sale of main products of small manufacturing and repairing enterprises in the unorganised sector. The survey, covered the smaller establishments employing at the most five workers (including atleast one hired worker on a fairly regular basis) as well as the own account enterprises not employing and hired worker while the larger establishments employing six or more workers (with atleast one hired) were covered through a separate survey. The survey covered the whole of Indian Union except Ladakh and Kargil Districts of Jammu and Kashmir State and interior villages of Nagaland. The survey was conducted in a total of 7527 sample villages and 7243 urban blocks located all over the country in the Central Sample. A maximum number of 14 enterprises and two households for consumer expenditure were canvassed in each of the sample village/urban block. Thus in all, 1,24,828 enterprises (13742 NDME, 53374 OAE in rural and 20951 NDME, 36761 OAE in urban sector were surveyed during 45th round. The State Governments and Union Territories have also participated on atleast equal matching basis in the survey programme.

The 46th round of NSS devoted to a survey on "Wholesale and retail trade" has been taken up from July, 1990, and will continue upto June, 1991. The survey will cover the smaller trading establishments employing at the most five workers (including atleast one hired worker on a fairly regular basis) as well as the own account enterprises not employing any hired worker, while the larger trading establishments are being covered through a parallel survey. The survey will cover the whole of the Indian Union except Ladakh and Kargil Districts of Jammu and Kashmir State and interior villages of Nagaland and Andaman and Nicobar Islands. The survey is being conducted in a total of 7240 sample villages and 7744 urban blocks located all over the country in the Central Sample. A maximum number of 16 or 18 enterprises and two house-holds for consumer expenditure will be canvassed in each of the sample village/urban block. The State Governments and Union Territories are also participating on atleast equal matching basis.

The 47th round survey (July-December, 1991) to be devoted to a survey on disabled and on culture and literacy is scheduled to commence on 1 July, 1991.

Survey results are brought out in form of reports. So far, nearly 350 reports have been brought out. In the past, survey results were brought out only in form of individual reports each covering a particular aspects for all states. This resulted in considerable delay on account of compilation and printing. To help reduce this delay, NSSO started a quarterly journal *Sarvekshand* from July, 1977.

This journal presents all results of NSSO as and when they are ready for publication to make them available to the readers with minimum possible delay. Analytical articles based on results previously published are also included in the journal. For priority users, reports in mimeographed form are also available much in advance.

PRICES

The series on Index Numbers of Wholesale Prices with base 1970-71=100 was in vogue for about 18 years. In order that the index faithfully reflects the many structural and other changes that have taken place in the economy over the years, a revised series with base 1981-82=100 has been introduced with effect from July, 1989. The new series has a significantly enlarged its coverage by including 447 distinct items as against 360 items in the 1970-71 series. The number of price quotations has also been increased from 1,295 in the earlier series to 2,371 in the new series.

Under the revised series of Index Numbers of Wholesale Prices (with base 1981-82=100), commodities are distributed under three major groups, namely: (i) primary articles, (ii) fuel, power, light and lubricants and (iii) manufactured products. Major groups have, in turn, been divided into groups which are further divided in the sub-groups.

Table 12.8 gives Annual Index Numbers of wholesale prices for the period 1982-83 and for 1989-90 with the revised base (1981-82=100)

CONSUMER PRICES

Table 12.9 shows Consumer Price Index Numbers for 'industrial workers for 1970-71 to 1989-90, along with indices for some selected centres. Out of 50 centres covered and a weighted average thereof, gives All-India Index.

In 1985-86, All-India General Index showed an increase of 38 points over that of the previous year. During 1986-87, All India General Index rose by 54 points and All-India Food Index by 62 points. During 1987-88, All-India General Index rose by 62 points and All-India Food Index by 67 points.

ECONOMIC CENSUS AND SURVEYS

The Central Statistical Organisation launched a scheme of Economic Census and Surveys in 1976 to fill data gaps in the Unorganised Sectors of Non-Agricultural Economy. The scheme envisaged organising periodically Country-wide Census on economic activities followed by detailed sample surveys of unorganised segments of Non-Agricultural Economy. The Economic Census was aimed at providing basic information on distribution of non-agricultural enterprises and the follow-up surveys for collection of

Table 12.8 Index Number of Wholesale Prices
Base 1981-82=100

Item	Weight	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90
I Primary Articles	32.295	106.7	118.2	125.5	125.7	137.1	152.6	160.1	163.6
Food Articles	17.386	111.1	126.5	131.8	134.1	147.8	161.1	177.1	179.3
Non-Food Articles	10.081	100.8	112.4	124.6	120.4	134.1	163.0	160.2	166.0
Fibres	1.791	92.0	109.1	144.7	109.3	96.7	136.1	149.7	165.9
Oilseeds	3.861	97.7	114.1	120.5	110.1	137.5	179.1	151.3	151.4
Minerals	4.828	103.3	100.4	105.1	106.5	104.2	100.5	98.5	102.2
II Fuel, Power, Light and Lubricants	10.663	106.5	112.5	117.3	129.8	138.6	143.3	151.2	156.6
III Manufactured Products	57.042	103.5	109.8	117.5	124.5	129.2	138.5	151.5	168.6
Food Products	10.143	97.4	107.8	113.9	117.2	129.1	140.5	147.8	166.4
Beverages, Tobacco and Tobacco Products	2.149	100.2	106.7	111.1	123.2	133.0	155.0	180.7	207.7
Textiles	11.545	104.8	109.5	120.0	119.5	116.0	126.6	139.6	158.2
Paper & Paper Products	1.988	108.5	118.2	131.4	144.1	154.3	170.2	180.9	208.4
Leather & Leather Products	1.018	100.4	108.3	115.4	128.1	134.2	142.9	168.4	185.7
Rubber & Plastic Products	1.592	108.4	109.7	115.6	125.6	132.8	143.5	155.3	159.4
Chemical & Chemical Products	7.355	103.5	107.3	112.0	118.3	124.6	131.9	135.8	140.0
Non Metallic Mineral Products	2.477	114.5	127.7	138.6	141.1	142.5	147.9	152.4	167.0
Basic Metals, Alloys and Metal Products	7.632	104.5	111.7	123.1	139.6	141.3	149.7	176.4	205.6
Machinery and Machine Tools	62.68	102.8	106.7	112.2	121.4	127.3	132.3	150.8	166.2
Other Miscellaneous Manufacturing Industries	9.72	101.8	101.6	101.5	99.3	107.0	109.8	113.1	117.2
IV All Commodities	100.000	104.9	112.8	120.1	125.4	132.7	143.5	154.2	165.7

detailed information about the structure of enterprises, investments, input, output, employment, etc., of the enterprises.

The First Economic Census, covering non-agricultural establishments (enterprises engaging atleast one hired worker on a fairly regular basis) was carried out in 1977. This was followed by Two Sample Surveys—one in 1987-79 relating to unorganised manufacturing and the second in 1979-80 devoted to trade, transport, hotels and restaurants, storage and warehousing and services. Taking advantage of the field agency deployed by the Registrar General of India (RGI) for house-listing operations, The Second Economic Census was conducted in 1980 along with the house-listing operations of 1981 Population Census with increased scope and coverage. It covered all enterprises (establishments and own-account enterprises) in the non-agricultural sectors and agricultural sectors excluding crop production and plantation. Based on the frame thrown up by this census,

BASIC ECONOMIC DATA

TABLE 12.9 CONSUMER PRICE INDEX NUMBER FOR INDUSTRIAL WORKERS

Year	Bombay	Ahmedabad	Calcutta	Madras	Kanpur	Delhi	All India	
							All Items	Food
Linking factor	5.12	4.78	4.74	5.05	4.69	4.97	4.93	4.98
1970-71	182	176	182	170	190	199	186	201
1971-72	190	181	187	182	196	211	192	205
1972-73	203	198	197	203	212	222	207	223
1973-74	233	245	228	229	251	265	250	279
1974-75	289	305	288	301	323	337	317	358
1975-76	300	293	287	314	299	333	313	342
1976-77	298	281	297	288	294	332	301	317
1977-78	318	310	320	311	330	358	324	345
1978-79	325	323	331	318	337	368	331	347
1979-80	359	348	351	350	357	389	360	373
1980-81	400	376	382	388	396	426	401	419
1981-82	460	441	414	446	439	472	451	476
1982-83	502	487	447	475	473	508	486	508
1983-84	564	544	511	550	528	551	547	581
1984-85	609	570	576	576	554	597	582	607
1985-86	654	599	610	630	614	648	620	638
1986-87	717	657	671	681	672	707	674	700
1987-88	791	724	714	756	725	788	736	767
1988-89	856^1	763^1	783^1	802^1	763^1	852^1	786^1	820^1
	171^2	163^2	172^2	167^2	172^2	177^2	166^2	172^2
1989-90	179	171	178	172	178	182	173	177

1. Average based on six months indices only—April-September 1988 on 1960 base.
2. Average based on six months indices only—October 1988-March 1989 on 1982 base.

Note: Old Series (1960=100) has been replaced by the New Series (1982=100) from October 1988. Linking factors between 1960 series and 1982 series are operative from October 1988.

Source: Labour Bureau, Simla.

three follow-up surveys were designed and carried out; one in 1983-84 on hotels and restaurants, transports, transport, storage and warehousing and services: second in 1984-85 on Unorganised Manufacturing; and third in 1985-86 on wholesale and retail trade.

The Third Economic Census, although due in 1986, could not be carried out due to financial constraints. In order to continue the follow-up survey programme, the frame of 1980 census was updated during 1987-88 in some of the urban areas having problems of identification of enumeration blocks and changes due to rapid industrialisation. On the basis of updated frame, a survey on hotels and restaurants and transport was conducted in 1989-90. The Third Survey on Wholesale and Retail Trade has been launched during 1990-91. The Fourth Survey, on the Services Sector under this series will be conducted during 1991-92.

According to the 1980 Economic Census, there were 169 lakh enterprises (58.4 percent rural) engaged in non-agricultural activities. This sector generated employment for 507 lakh persons (43.3 percent rural). In the 'Enterprise Survey' carried out in 1983-84 covering hotels and restaurants, transport, storage and warehousing and services sectors, total number of enterpises at All-India Level was estimated at 38 lakh (53.2 per cent rural).

TABLE 12.10 CONSUMER PRICE INDEX NUMBER FOR URBAN NON-MANUAL EXPLOYEES

(BASE 1960=100)

Year	Bombay	Culcutta	Madras	Delhi/New Delhi	All-India
1970-71	168	170	175	174	174
1971-72	172	174	188	180	180
1972-73	183	180	203	190	192
1973-74	204	204	231	217	221
1974-75	241	238	291	262	270
1975-76	246	243	306	273	277
1976-77	255	251	294	274	277
1977-78	269	265	311	288	296
1978-79	285	279	321	303	306
1979-80	315	297	350	321	330
1980-81	347	331	390	352	369
1981-82	393	367	439	395	413
1982-83	440	384	470	428	446
1983-84	493	418	531	468	492
1984-85	538	451	577	508	532
1985-86	568	481	611	551	568
1986-87	612	530	671	597	613
1987-88[1]	666	562	736	645	656
1988-89[2]	130	135	141	135	136
1989-90[2]	139	146	152	143	145

1. Average is based on seven months indices (April 1987-October 1987)
2. A new series of Index Numbers on Base 1984-85=100 has been introduced from November 1987. All-India Index on New Base may be converted to Old Base by multiplying the conversion factor 5.32. Conversion factors in respect of Bombay, Calcutta, Madras, Delhi/New Delhi are 5.38, 4.51, 5.77 and 5.08 respectively.

Services Sector, contributed the largest share of 56.6 per cent, followed by hotels and restaurants 26.3 percent and transport 17 per cent. Employment generation was the highest in the Services Sector 56.5 per cent, followed by hotels and restaurants 31.8 per cent and transport 11.6 per cent.

Survey on Unorganised Manufacturing carried out in 1984-85 revealed that there were 197 lakh enterprises. Employment generated by this sector was of the order of 369 lakh persons.

The 1985-86 survey on trade showed that there were Two Lakh Directory Establishments engaged in this sector. It generated employment for over 16 lakh, 88,4 per cent in urban and 11.6 per cent in rural areas.

The Third Economic Census has been launched in 1990 alongwith the house-listing operations of 1990-91 Population Census. As in 1980 Economic Census, it covers establishments and own-account enterprises in both non-agricultural and agricultural sectors excluding crop production and plantation. Quick Manual Tabulation Results of Economic Census are likely to be brought out by the C.S.O. in January, 1991.

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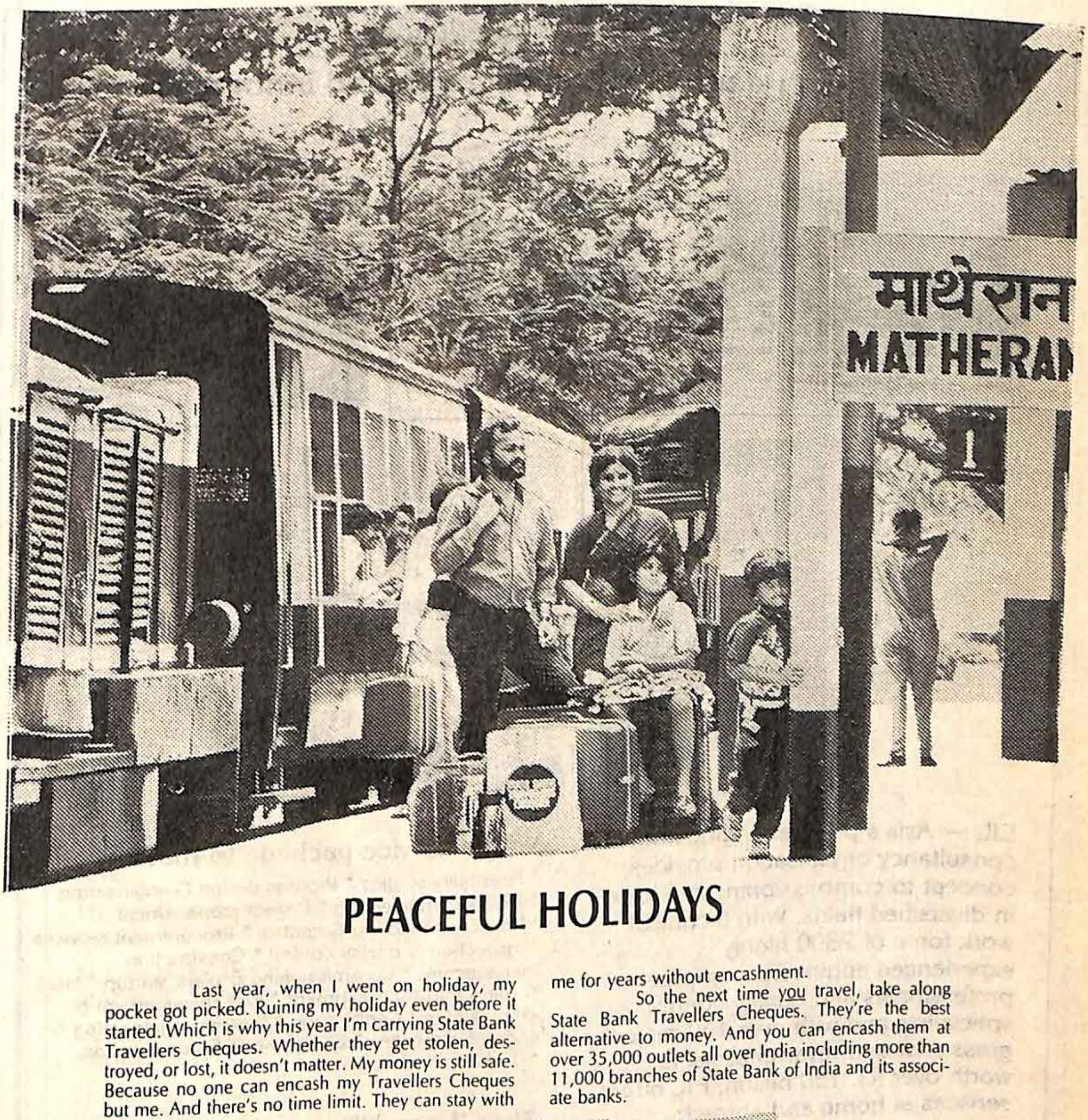

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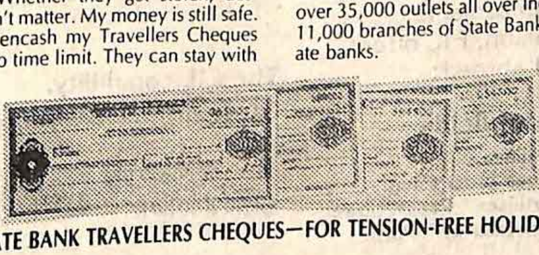

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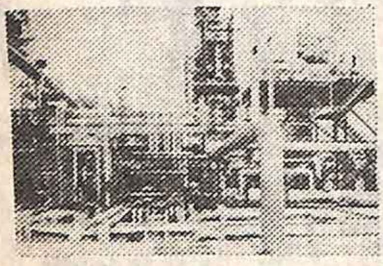

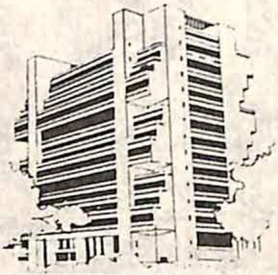

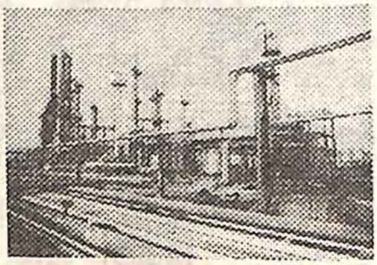

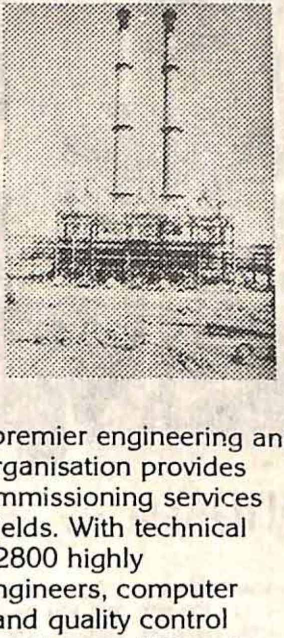

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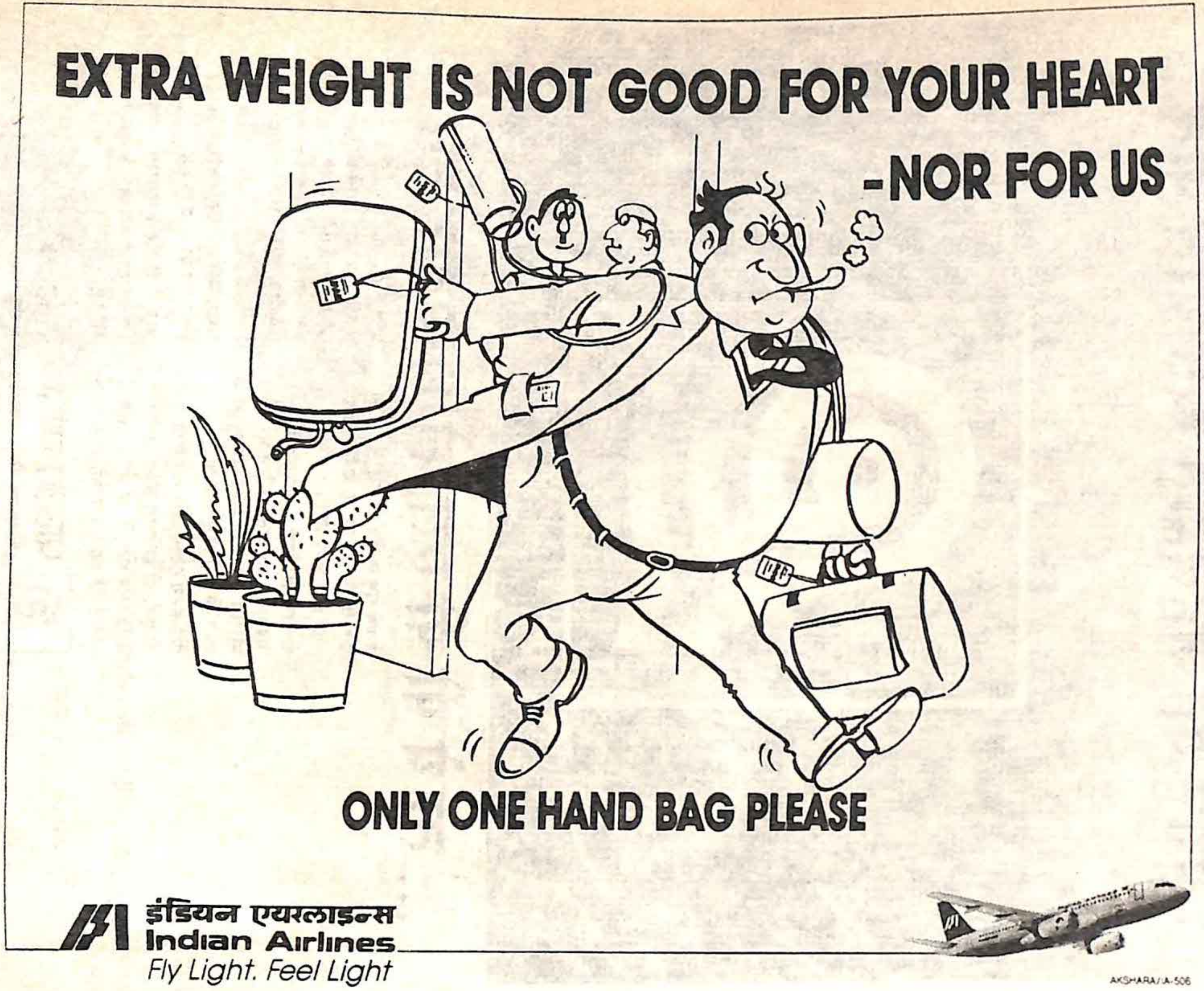

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13 Finance

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The Department of Economic Affairs consists of Seven Main Divisions, namely, (i) Economic, (ii) Banking, (iii) Insurance, (iv) Budget, (v) Investment, (vi) External Finance and (vii) Currency and Coinage. This department *inter-alia* monitors current economic trends and advises Government on all matters of internal and external economic management including working of Commercial Banks, term-lending institutions, investment regulations, external assistance, etc., preparation of the Budget of the Union of India as well as the State Governments and Union Territory Administrations with Legislature when under President's Rule as well as their presentation to Parliament is also the responsibility of this department.

The Department of Expenditure comprises Eight Main Divisions, namely, (i) Plan Finance Division, (ii) Establishment Division, (iii) Cost Accounts Branch, (iv) Controller General of Accounts, (v) Finance Commission Division, (vi) Implementation Cell, (vii) Integrated Finance Division and (viii) Staff Inspection Unit.

The Department of Revenue exercises control in respect of revenue matters relating to Direct and Indirect Union Taxes through Two Statutory Boards, namely, Central Board of Direct Taxes and the Central Board of Excise and Customs. This department is also entrusted with the administration and enforcement of controls and regulatory measures provided in the enactments concerning Central Sales Tax, Stamp Duties, Gold Control, Foreign Exchange and other relevant Fiscal Statutes. Control over production and disposal of Opium and its products is also vested with this department.

ECONOMIC AFFAIRS

PUBLIC FINANCE

Power to raise and disburse public funds has been divided under the Constitution between Union and state governments. Sources of revenue for union and states are, by and large mutually exclusive if shareable taxes and duties between them are excluded.

The Constitution provides that: (i) no tax can be levied or collected except by an authority of law; (ii) no expenditure can be incurred from public funds except in the manner provided in the Constitution, and (iii) executive authorities must spend public money only in the manner sanctioned by the Parliament in case of Union and by the State Legislature in the case of a state.

All receipts and disbursement of the Union are kept under two separate headings, namely Consolidated Fund of India and Public Account of India. All revenues received loans raised and money received in repayment of loans by the Union form Consolidated Fund. No money can be withdrawn from this fund except under the authority of an Act of Parliament. All other receipts, such as deposits, service funds and remittances go into Public Account and disbursements therefrom are not subject to the Vote of Parliament. To meet unforeseen needs, not provided in the Annual Appropriation Act, a Contingency Fund of India has been established under ARTICLE 267 (1) of the Constitution. The Indian Constitution provides for the establishment of a Consolidated Fund, a Public Account and a Contigency Fund for each state.

The Railways, the largest public undertaking, present their budget separately to Parliament. Appropriations and disbursements under the Railway Budget are subject to the same form of Parliamentary Control as other appropriations and disbursements. However, as the Railways have no separate cash balance of their own, total receipts and disbursements of the Railways are incorporated in the budget of the Union as part of the General Budget.

SOURCES OF REVENUE

The main sources of the Union Revenue are Customs Duties, Union Excise Duties, Corporate and Income Taxes. The Railways and the Posts and Telegraphs also pay the Union dividend on the capital invested in them.

The main heads of revenue in states are taxes and duties levied by the respective state governments, share of taxes levied by the Union and grants received from the Union. Property Taxes, Octroi and Terminal Taxes are the mainstay of Local Finance.

TRANSFER OF RESOURCES

Devolution of resources from the Union to the states is a salient feature of the system of Federal Finances of India. Apart from their share of taxes and duties, state goverenents receive statutory and other grants as well as loans for various development and non-development purposes. The total amount of resources transferred to the states during each Plan Period is shown in table 13.1.

ANNUAL FINANCIAL BUDGET

An estimate of all anticipated receipts and expenditure of the Union for ensuring financial year is laid before the Parliament. This is known as 'Annual Financial Statement' or 'Budget' and covers Central Government's transactions of all kinds, in and outside India, occurring during the preceding year, the year in which the statement is prepared as well as the ensuing year or the 'Budget Year' as it is known.

TABLE 13.1 RESOURCES TRANSFERED TO STATES

(Rs crore)

Period	Taxes and Duties	Grants	Loans (Gross)	Total
First Plan	344	288	799	1,431
Second Plan	688	789	1,411	2,868
Third Plan	1,196	1,304	3,100	5,600
Annual Plans				
1966–67	373	419	916	1,708
1967–68	417	471	869	1,757
1968–69	492	499	891	1,882
Fourth Plan	4,562	3,831	6,708	15,101
Fifth Plan	8,268	8,198	8,978	25,444
Annual Plan 1979–80	3,406	2,288	2,697	8,391
Sixth Plan	243,728	17,941	23,722	65,391
Seventh Plan1	49,465	42,005	48,945	40,415
Eighth Plan:				
1990-91 2.(BE)	14,426	11,309	12,004	37,739

1 RE: Revised Estoimates: 1989-90 figures included in it are revised estimate

2. BE: Budget Estimates.

The Presentation of Budget is followed by a general discussion on it in both Houses of Parliament. Estimates of Expenditure from Consolidated Fund of India are placed before the Lok Sabha in the form of 'Demands of Grants'. All withdrawals of money from the Consolidated Fund are, thereafter, authorised by an Appropriation Act passed by Parliament every year. Tax proposals of Budget are embodied in a Bill which is passed as the 'Finance Act' of the year.

Estimates of receipts and expenditure are similarly presented by state governments in their Legislature before the beginning of the financial year and Legislative Sanction for Expenditure is secured through similar procedure. Budgetary portion of the Union from 1987-88 onwards is shown in table 13.2.

PUBLIC DEBT

Public debt includes internal debt comprising borrowings inside the Country like market loans, compensations and other bonds, Treasury Bills issued to the Reserve Bank of India, State Governments, Commercial Banks and other parties as well as Non-negotiable Non-interest Bearing

Rupees Securities issued to the International Financial Institutions; and external debt comprising loans from Foreign Countries, International Financial Institutions, etc. Table 13.3 gives an analysis of Public Debt at the end of selected years.

TABLE 13.2 BUDGETARY POSITION

(Rs crore)

	1988–89 (Actuals)	1989–90 (Budget Estimates)	1989–90 (Revised Estimates)	1990–91 (Budget Estimates)
1. Revenue Receipts	43,591	52,630	52,254	57,938
2. Revenue Expenditure	54,106	59,642	64,690	70,970
3. Revenue Deficit	10,515	7,012	12,436	13,632
4. Capital Receipts	25,673	22,109	23,692	29,391
5. Capital Expenditure	20,800	22,434	23,006	23,565
6. Total Receipts	69,264	74,739	75,946	87,329
7. Total Expenditure	74,906	82,076	87,696	94,535
8. Overall Deficit	5,642	7,337	11,750	7,206

BANKING

Although some form of banking, mainly money-lending type, has been in existence in India from ancient times, it was only a little over a Century Ago that modern banking took its birth. The earliest institutions which undertook banking business under the British Regime were Agency-houses which carried on banking business in addition to their trading activities. Most of these Agency-houses were closed-down during 1929-32. A number of banks which came into existance between the thirties and forties of the Last Century were also in great trouble. Prominent among these were the Three Presidency Banks which were later amalgamated into Imperial Bank of India in 1919 following a banking crisis.

The first bank of limited liability managed by Indians was the Oudh Commercial Bank founded in 1881. Subsequently, the Punjab National Bank was established in 1894. Swadeshi Movement, which began in 1906, encouraged the formation of a number of Commercial Banks. Banking crisis in 1913-1917 and failure of 588 banks in various states during the decade ending in 1949, underlined the need for regualting and controlling Commercial Banks. The Banking Companies (Inspection Ordinance) was passed in January, 1946, and the Banking Companies (Restriction of Braanches) Act in February, 1946. The Banking Companies Act was passed in February, 1949, which was subsequently amended to read as Banking Regulation Act.

With a view to bringing Commercial Banks into the mainstream of economic development with definite social obligations and objectives, the Government issued an Ordinance on 19 July, 1969, acquiring ownership and control of 14 Major Banks in the Country with deposits exceeding Rs 50 crore each. Six more Commercial Banks were nationalised from 15 April, 1980.

TABLE 13.3 PUBLIC DEBT OF GOVERNMENT OF INDIA

	As at the end of March, 1991									
Item	1982	1983	1984	1985	1986	1987	1988	1989	1990(RE)	1991(RE)
1. Internal Debt (i to vi)	35,653	46,939	50,263	58,537	71,039	86,313	98,646	1,14,498	1,33,361	1,49,078
(i) Current Market Loans	18,461	22,232	26,270	30,366	35,241	40,759	46,623	55,042	62,442	70,443
(ii) Others[1]	309	429	520	551	545	516	454	1166	1079	1062
(iii) Special Bearer Bonds	964	964	964	964	964	964	964	964	964	876
(iv) Treasury Bills	10,273	17,431	15,756	19,452	26,014	19,876	8,028	14,273	24,927	32,133
(v) Special Floating and other Loans[2]	1,536	1,673	2,183	2,554	3,088	4,331	5,400	6,066	6,240	6,855
(vi) Special Securities issued to RBI	4,110	4,210	4,570	4,650	5,187	19,867	37,177	36,987	37,709	37,709
2. External Debt[3]	12,328	13,682	15,120	16,637	18,153	20,299	23,223	25,746	28,517	31,850
Public Debt (1+2)	47,981	60,621	65,383	75,174	89,192	1,06,612	1,21,869	1,40,244	1,61,878	1,80,928

1. Comprises balance of expired loans, compensation and other Bonds such as National Rural Development Bonds and Capital Investment Bonds. Annuity Certificates are excluded.

2. These represent mainly Non-negotiable Non-interest Bearing Securities issued to International Financial Institutions like the International Monetary Fund, International Bank of Reconstruction and Development and Asian Development Bank.

RE: Revised Estimates.

BE: Budget Estimates.

3. At Book Value

The objectives of the Public Sector Banking System were outlined on 21 July, 1969. Some of them are to: (a) mobilise savings of people to the largest possible extent and utilise them for productive purpose; (b) operations of banking system should be prompted by a larger social purpose and should be subject to close public regulation; (c) legitimate credit needs of private sector industry and trade, big or small (d) ensure that needs of productive sectors of the economy and, in particular those of farmers, small-scale industrialists and self-employed professional groups are met in an increasing manner; (e) Nationalised Banks to actively foster the growth of the New and Progressive Entrepreneurs and create fresh opportunities for hitherto Neglected and Backward Areas in different parts of the Country; and (f) to curb the use of Bank Credit for speculative and other unproductive purposes.

RESERVE BANK OF INDIA

The Reserve Bank of India (RBI) was established under the Reserve Bank of India Act, 1934, on 1 April, 1935 and Nationalised on 1 January, 1949. Its main objectives are to regulate issue of bank notes, keeping Foreign Exchange Reserves of the Country, Operate Currency and Credit System of the Country with a view to securing monetary stability in India and Developing Financial Structure of the Country on sound-lines consistent with the National Socio-economic Objectives and Policies.

The RBI is the sole authority for Issue of Currency in India other than One Rupee Coins and Subsidiary Coins and Notes. As the agent of the Central Government, The Reserve Bank undertakes distribution of One Rupee Notes and Coins as well as Small Coins issued by the Government. The Reserve Bank of India acts as a Banker to the Central Government, State Governments, Commercial Banks, State Cooperative Banks and administers monetary policy with a view to promoting stability of prices while encouraging higher production through appropriate deployment of credit. RBI also plays an important role in the maintenance of Exchange Value of the Rupee and acts as an Agent of the Government in respect of India's Membership of the International Monetary Fund. It also performs a variety of developmental and promotional functions.

INDIAN BANKS ABROAD

One hundred and fifteen branches including off-shore branches and mobile agencies of Nine Indian Commercial Banks were operating in Foreign Countries as on 30 November, 1990. These branches are spread over a Number of Countries and located in Major Centres including International Financial Centres like London, Singapore, Baharain, Tokyo and Paris. The largest concentration is in the United Kingdom (33) followed by Fiji Islands (9), Kenya (8), Hongkong (7), USA (7) and United Arab Emirates (6). These branches specialise in Various Areas of International Banking including Financing of Foreign Trade. They cater to needs of Indian Exporters and Importers and, to that extent they form an integral part of the Domestic Banking System. Besides these branches, Indian Commercial Banks are having representative offices in USA, Indonesia, Iran, Egypt, USSR, Italy, Zimbabwe and Phillipines. Indian Commercial Banks are also having wholly-owned subsidiaries/joint ventures in USA, Canada, Kenya, Hongkong, Zambia, Nigeria, Uganda, Malaysia, Bhutan and Mauritius.

COMPOSITION OF THE BANKING SYSTEM

Commercial Banking System in India consisted 274 Scheduled Commercial Banks and Four Non-scheduled Commercial Banks at the end of June, 1989. Of the Scheduled Commercial Banks, 224 are in the public sector and these account for 90 per cent of the Commercial Banking System. In the Public Sector Banking System, there are 196 Regional Rural Banks, specially set-up to increase the flow of credit to small borrowers in the rural areas. These banks have specified areas of operations usually limited to Two to Three Districts. Their lending operations are also directed towards specified weaker sections. They undertake some other Commercial Banking Business. The remaining 28 banks in public sector are Regular Commercial Banks and transact all types of Commercial Banking Business. Some important indicators in regard to progress of Commercial Banking in India during the recent past are given in table 13.5.

Amongst the Public Sector Banks (as at the end of December, 1989), State Bank of India (SBI) was the biggest unit with 8,113 Branches and deposits of Rs 38,693 crore (excluding Inter-bank Deposits) and advances of Rs 25,477 crore (excluding Inter-bank Credits). Apart from the State Bank of India, there are Seven Other Banks called Associate Banks of the State Bank of India. In these banks, SBI owns either the Entire or the Majority of Share Capital. The State Bank and its Associate Banks as a group account roughly for one-third of aggregate banking business conducted by the Public Sector Banks (aggregate of deposits and advances) and around 33 per cent of the aggregate business of the Entire Banking System. Other 20 banks in the public sector are Nationalised Banks, 14 of them came in the public sector on 19 July, 1969, and six others on 15 April, 1980.

The philosophy of Bank Nationalisation was that the financial institutions, which mobilised savings of public, should broadly function as an instrument for promoting economic and social development in a more purposive manner. In the Post-nationalisation Period, there has been a rapid-growth of the Banking System.

DEPOSIT MOBILISATION

There has been a significant increase in the deposits of Scheduled Commercial Banks in the Post-nationalisation Period. At the end of June

1969, deposits of these banks aggregated to only Rs 4,646 crore i.e. about 15.5 per cent of the national income at current prices. By the end of December, 1989, they had increased to Rs 1,61,913 crore and to Rs 1,84,824 crore by the end of December, 1990. Deposits with banks in the public sector were Rs 3,871 crore in June, 1969. At the end of December, 1989, they were Rs 1,39,022 crore increasing further to Rs 1,61,912 crore by December 1990. Deposits mobilised by the banks are utilised for (i) investments in Government Securities and other approved securities in fulfilment of the liquidity stipulation and (ii) loan and advances to borrowers. (iii) investment in mutual funds, leasing and other related activities.

ADVANCES

Commercial Banks have been investing part of their deposits in Government Securities and Bonds and Debentures of Government Associated Bodies in pursuance of liquidity requirements stipulated by the Reserve Bank of India. With growth of their deposits as also owing to successive upward revisions of Statutory Liquidity Ratio, there has been a significant rise in the investment of banks in Government and other approved securities from Rs 1,727 crore in March, 1990 to Rs 73,647 crore upto January 11, 1991 (excluding RRBs). Investment of funds by the Scheduled Commercial Banks in such securities is now an important instrument of resource mobilisation for Financing Plan Programme.

BRANCH EXPANSION

As against 8,262 branches at the end of June, 1969, the total number of Commercial Bank Branches at the end of December, 1989, was 58,417. The net increase in the number of functioning offices between June, 1969 and December, 1989 was 50,155. Consequently, banking coverage in the Country as a whole has improved from one office per 65,000 persons in June, 1969, to one office per 12,000 by the end of December, 1989.

COVERAGE OF RURAL AREAS

In the Post-nationalisation Period, thrust of the Branch Expansion Policy had been on improving availability of banking facilities in the rural areas. Of the total branch network of 58,417 branches at the end of December, 1989, 33,640 branches were in the rural centres having population upto 10,000 persons.

CREDIT DEPLOYMENT

Advances constitute the end objective of banking. From a low-level of Rs 3,599 crore in June, 1969, advances of Scheduled Commercial Banks increased to Rs 84,465 crore by December, 1989 and to Rs 1,08,935 crore by December 1990. Advances of banks in public sector increased from Rs 3,017 crore to Rs 95,519 crore by December, 1990.

SECTORAL DEPLOYMENT

More significant than the increase in bank credit are the changes in the sectoral deployment. In the Pre-nationalisation Days, large and medium industry and wholesale trade accounted for over 78 per cent of the bank credit. By March 1990, share of these sectors (excluding credit for public food procurement) had declined to about 43.8 per cent. Correspondingly, share of priority sectors, food procurement agencies, etc., has shown significant improvement.

ADVANCES TO PRIORITY SECTORS

Extension of credit to small borrowers in the hitherto neglected sectors of the Economy has been one of the major tasks assigned to the Public Sector Banks in the post-nationalisation Period. To achieve this objective, banks have drawn up schemes to extend credit to small borrowers in sectors like agriculture, small-scale industry, road and water transport, retail trade and small business, which traditionally had very little share in the credit extended by banks. Taking into account the need to provide resource requirements to weaker sections, for specific needs, consumption credit (with certain limits) has been included in priority sectors. Similarly, small housing loans (not exceeding Rs 5,000) to Scheduled Castes/Scheduled Tribes and other Weaker Sections are also classified as Priority Sector Advances. Number of Borrowal Accounts with the Public Sector Banks for these categories of borrowers increased from 2.60 lakh to 355 lakh between June, 1969 and September, 1990. Amount outstanding during the same period increased from Rs 441 crore to Rs 39,833 crore. Public Sector Banks accounted for 42.7 per cent of the total bank credit by September, 1990. Table 13.6 shows achievements of the Public Sector Banks in stepping-up flow of credit in various priority sectors.

CREDIT TO WEAKER SECTIONS

To increase credit flow to small and poor borrowers, Weaker Sections comprising of Small and Marginal Farmers, landless labourers, tenant farmers and Share-croppers, Artisans, Village and Cottage Industries, Beneficiaries of Intergrated Rural Development Programme, Scheduled Castes and Scheduled Tribes, a Diggerential Rate of Interest (DRI) Scheme has been evolved. This scheme was slated to receive not less than 10 per cent of net bank credit by March 1985. By September, 1990, weaker sections had received Rs 9,961 crore and accounted for 10.7 per cent of aggregate advances of Public Sector Banks.

TABLE 13.4 PROGRESS OF COMMERCIAL BANKING IN INDIA

(In June)

I	ITEM	1969	1973	1978	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
1.	Number of Commercial Banks	89	83	128	187	187	206	226	247	268	276	279	278	278
	(i) Scheduled Commercial Banks	73	74	122	148	183	202	222	243	264	273	275	274	274
	(ii) Regional Rural Banks	—	48	73	102	121	142	162	183	194	196	196	196	196
	(iii) Non-scheduled Commercial Banks	16	—	6	5	4	4	4	4	4	4	4	4	4
2.	Number of offices in India	8262	15362	28016	32419	35707	39177	42079	45332	51385	53265	53840	55410	57699
3.	Population per office (in thousand)	64	37	23	21	19	18	17	16	15	14	15	14	14
4.	Aggregate deposits of Scheduled Commercial Banks (Rs crore)	4646	5165	23133	30377	40549	46128	54039	64620	77075	51828	107898	126323	147854
5.	Aggregate credit of Scheduled Commercial Banks (Rs crore)	3,599	6,412	15,694	22,068	26,551	30,180	36,006	43,613	50,921	57,229	64,213	72,436	89,080
6.	Per capita deposit of Scheduled Commercial Banks (Rs)[1]	88	160	361	494	587	654	750	887	1,026	1,198	1,374	1,586	1,821
7.	Per capita credit of Scheduled Commercial Banks (Rs)[1]	68	112	243	327	385	428	500	593	678	747	816	909	1,097
8.	Deposits as percentage of National Income (at current prices)[2]	15.5	21.4	29.4	35.9	36.2	38.4	38.3	41.5	43.6	47.6	44.9	45.8	45.7

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1. Based on mid-year population figures estimated by the Registrar General of India.
2. Relates to March-end Nationl Income Data which relates to Revised Series. Data for 1982 and 1983 based on Provisional Estimates and for 1984 in Quick Estimates.

TABLE 13.5 ADVANCES OF PUBLIC SECTOR BANKS

Sector	NO. OF BORROWAL ACCOUNTS (lakh)						
	June 1969	Dec. 1985	Dec. 1986	Dec. 1987	Dec. 1988	Dec. 1989	Sept. 1990
1. Agriculture							
(1) Direct Finance	2.67	150.27	165.58	181.32	193.16	207.50	203.54
(2) Indirect Finance	—	9.73	9.55	7.70	6.72	7.46	6.88
2. Small-Scale Industry	0.57	15.95	18.11	21.19	24.64	28.06	28.92
3. Road and Water Transport Operators	0.03	5.92	6.16	6.64	6.99		
4. Retail Trade and Small Business	—	39.88	47.86	57.67	68.10		
5. Professional and Self-employed persons	—	16.13	18.26	20.81	22.20	111.20	116.00
6. Education	0.01	0.66	0.69	0.76	0.72		
7. Housing	—	1.64	1.95	2.44	2.44		
8. Consumption	—	1.62	1.49	1.67	1.76		
9. Other Priority Sectors	—	0.14	0.09	0.23	0.18		
Total	3.28	241.94	269.74	300.48	326.91	354.22	355.34

TABBLE 13.6 SECTOR-WISE ADVANCES OF PUBLIC SECTER BANKS

Sector	Amount Outstanding (Rs Crore)						
	June 1969	Dec. 1985	Dec. 1986	Dec. 1987	Dec. 1988	Dec. 1989	Sept. 1990
1. Agriculture							
(1) Dierect Finance	188.40	7,415.13	8,929.97	10,341.38	12,072.04	14,020.29	14,897.35
(2) Indirect Finance	—	1,378.32	1,377.49	1,463.47	1498.42	1,401.01	1,286.43
2. Small-Scale Industry	285.90	7,470.70	8,607.08	10.190.20	12,234.79	14,281.40	15,373.02
3. Road and Water Transport Operators	8.20	1,882.70	1,958.62	2;016.30	2,166.05		
4. Professional and Self-employed Persons	0.30	653.29	833.68	991.93	1,102.17		
5. Retail Trade and Small Business	—	1,721.50	2,122.49	2,599.54	3,137.99	7,643.01	8,275.76
6. Education	0.50	32.68	35.85	45.56	55.15		
7. Housing	—	63.80	106.06	167.01	228.94		
8. Consumption	—	21.07	18.91	30.00	24.44		
9. Other Priority Sectors	—	8.61	18.13	95.18	142.45		
Total	483.30	20,647.88	24,085.28	27,940.57	32,662.14	37,345.71	39,832.56

DIRECT FINANCE TO AGRICULTURE

Public Sector Banks were initially given a target of extending 15 per cent of the total advances as direct finance to the Agriculture Sector to be achieved by March, 1985. This target was subsequently raised to 16 per cent to be achieved by March, 1987 and more recently, it has been raised to 17 per cent to be achieved by March, 1989. It has again been raised to 18 per cent to be achieved by March, 1990. As on September, 1990, banks extended 16 per cent of the total advances by direct finance to the Agriculture Sectors.

ADVANCES TO SC/ST BORROWERS

People belonging to the Scheduled Castes and Scheduled Tribes have been recognised as the most vulnerable sections. Banks have been asked to make special efforts to assist them with adequate credit to enable them to undertake self-employment ventures to acquire income-generating capital assets so as to improve their standard of living. At the end of September, 1989, Public Sector Banks had assisted 90.23 lakh Scheduled Caste/ Scheduled Tribe Borrowers involving an amount of Rs 3142 crore.

INTEGRATED RURAL DEVELOPMENT PROGRAMME

The Integrated Rural Development Programme envisages Capital Subsidy and credit assistance to the identified poor families for acquiring income-generating assets to come-up above the poverty line. The programme envisaged a Capital Subsidy flow of Rs 1,500 crore during the Sixth Plan Period with a matching credit mobilisation of Rs 3,000 crore to benefit 1.50 crore families. As against this, the Banking System had mobilised Term Credit of Rs 3,102 crore assisting 1.66 crore beneficiary families. Provisional target for the Seventh Plan had been set to assist two crore beneficiary families. During the Seventh Plan i.e. 1985-90, the Banking System had assisted 1.82 crore beneficiary families involving Term Credit of Rs 5,380.53 crore. Banking System assisted 33.51 lakh beneficiary families during 1989-90 with Rs 1,228.53 crore. The corresponding figures for 1990-91 (April-December 1990) are 17.37 lakh beneficiary families and Rs 691.63 crore of Term Credit.

NABARD

The National Bank for Agriculture and Rural Development (NABARD) came into existence on 12 July, 1982. It took over functions of the erstwhile Agriculture Credit Department, Rural Planning and Credit Cell of the Reserve Bank of India and Agricultural Refinance and Development Corporation. Its Subscribed and Paid-up Capital is Rs 100 crore, contributed by the Central Government and the Reserve Bank of India in equal proportions. NABARD was established for providing credit for promotion of agriculture, Small-scale Industries, Cottage and Village Industries, Handicrafts and other allied economic activities in rural areas with a view to promoting Integrated Rural Development and securing prosperity of rural areas and for matters connected therewith or incidental thereto.

NABARD is an apex institution accredited with all matters concerning policy, planning and operations in the field of credit for agriculture and other economic activities in the rural areas. It functions are to (i) serve as an apex refinancing agency for institutions providing investment and production credit for promoting various developmental activities in the rural areas; (ii) take measures towards institution building for improving absorptive capacity of Credit Delivery System including monitoring, formulation of rehabilitation schemes, restructuring of credit institutions, training of personnel, etc., (iii) coordinate rural financing activities of all institutions engaged in the developmental work at field-level and maintain liaison with Central Government/State Governments, Reserve Bank of India and other National Institutions concerned with policy formulation and also (iv) undertake monitoring and evaluation of projects refinanced by it.

NABARD's refinance is available to the State Land Development Banks, State Cooperative Banks, Scheduled Commercial Banks and Regional Rural Banks. While the ultimate beneficiaries of investment credit can be individuals, partnership concerns, companies and state-owned corporations or cooperative societies, production credit is generally given to individuals. Term-credit Disbursement of NABARD by way of refinance under schematic lendings was Rs 1702 crore during 1989-90 (April-March). Refinance commitments under the New Schemes approved during the same period were Rs 2,039 crore against Rs 1,381 crore during the previous year. Refinance provided for implementation of Integrated Rural Development Programme touched Rs 549 during the above period.

REGIONAL RURAL BANKS

The Regional Rural Banks were established to take the banking services to the door-steps of rural masses especially in unbanked rural areas. These banks were to provide institutional credit to the weaker sections of society at concessional rate of interest who had *Per-force* been depending on private money-lenders. These banks were also intended to mobilise rural savings and channelise them for supporting productive activities in the rural areas.In all, there are 196 Regional Rural Banks in all states of the Country except Sikkim covering 372 of the total of 440 Districts having a network of 14,651 branches. The credit support provided by these banks amounted to Rs 3554.04 crore (outstandings) in 118.27 lakh Borrowal Accounts as at the end of March, 1990. They mobilised deposits to the tune of Rs 4,150.52 crore as at the end of March, 1990, in 300.79 lakh deposit accouns.

While the basic purpose for which the Regional Rural Banks had been established has more or less been achieved, the viability of these banks continue to be a cause of anxiety. The accumulated losses of 194 reporting banks amounted to Rs 191.04 crore as on 31 March, 1989. The reasons for the Regional Rural Banks incurring losses mainly are:- (i) impact of narrow spread, (ii) restruction on the choice of clientebie and (iii) area of operation as well as other restrictions on the profitability of the Regional Rural Banks. Another feature of these banks are that out of the 115 Districts identified under the Tribal Sub-Plan Area in the Whole of the Country, Districts as many as 94 have been covered by the Regional Rural Banks.

SELF-EMPLOYMENT SCHEME FOR THE EDUCATED UNEMPLOYED YOUTH

The Self-employment Scheme for the Educated Unemployed Youth was introduced in 1983-84 to create self-employment opportunities and to motivate educated youngmen and women to take-up self-employment ventures. The scheme was extended to all areas of the Country except cities with more than ten lakh population as per 1981 census. Under the scheme, Composite Loans not exceeding Rs 35,000 for Industrial Ventures, Rs 25,000 for Service Ventures and Rs 15,000 for Business Ventures are granted. Banks are not to ask for any margin money or seek Collateral Security of Third Party Guarantee for the Loan.

The annual target of banks was to assist 2.5 lakh beneficiaries from 1983-84 to 1986-87 and 1988-89. For the years 1987-88 and 1989-90, the target was 1.25 lakh beneficiaries to be covered by the banks. Against this, banks had assisted 2.42 lakh, 2.29 lakh, 2.21 lakh and 2.19 lakh during the years 1983-84, 1984-85, 1985-86 and 1986-87 respectively. During 1988-89,1.91 beneficiaries were assisted. The amounts of loan sanctioned were Rs 401.54 crore, Rs 429.53 crore, Rs 429.99 crore and Rs 455.12 crore for 1983-84, 1984-85, 1985-86 and 1986-87 respectively. For 1988-89, the corresponding amount was Rs 404.32 crores. During 1987-88 and 1989-90 against the target of 1.25 lakh beneficiaries to be covered, number of beneficiaries assisted were 1.20 and 0.97 lakh respectively. The amounts involved were Rs 259.76 and Rs 190 crore respectively.

SELF-EMPLOYMENT PROGRAMME FOR THE URBAN POOR

Self-Employment Programme For the Urban Poor (SEPUP) was launched from 1 September, 1986. It covers all Cities/Towns with a population exceeding 10,000 as per 1981 Census and areas which are not covered under Integrated Rural Development Programme (IRDP). One beneficiary for every 300 population (1981 Census) is to be assisted at each Urban Centre. Presons whose Total Family Income does not exceed Rs 600 per month are eligible for assistance to undertake any economically viable activity. A borrower is eligible for a maximum loan of Rs 5,000 at an interest rate of 10 per cent per annum. A Capital Subsidy at the rate of 25 per cent of the amount of assistance is provided by the Central

Government. No Collateral Security or Third Party Guarntee or Margin Money is needed. Repayment of loan is in 33 equal monthly instalments after a grace period of three months.

During 1986-87, 1987-88, 1988-89 and 1989-90, the number of beneficiaries were 3.41 lakh, 3.82 lakh 3.57 lakh and 3.02 lakh respectively. The amount sanctioned during these years were Rs 116.14 crore, Rs 136.55 crore, Rs 137.07 crore and Rs 117.20 crore respectively.

DIFFERENTIAL RATE OF INTEREST SCHEME

Public Sector Banks are operating a Scheme of Differential Rate Interest (DRI) since 1972. The scheme covers poor borrowers having an annual family income of not more than Rs 6,400 in rural areas and Rs 7,200 in other areas and not owning more than 2.5 acres of un-irrigated or one acre of irrigated land. They are given Credit support at four per cent per annum rate of interest for sums upto Rs 6,500 as Term Loan and Working Capital Loan for productive ventures. The Public Sector Banks had an outstanding of DRI credit of Rs 708.03 crore in 42.87 lakh Borrowal Accounts as at the end of June, 1990.

HOUSING FINANCE

The Reserve Bank of India (RBI) had liberalised the terms and conditions for housing loans in November, 1988. Some modifications were also made in these guidelines in May, 1989, January, 1990 and March, 1990. Under the current guidelines for Housing Finance of the RBI, each bank should compute its share of the housing finance allocation for 1990-91 at 1.5 per cent of the incremental deposits as on the last reporting Friday of March, 1990, over the corresponding figures of the last reporting Friday of March, 1989. However, the banks can exceed this level upto a reasonable limit having regard to its resources position and complaince with the statutory reserve requirements. Thirty per cent of the total allocation should be reserved for direct lending. Of this, atleast half i.e. 15 per cent of the total allocation should be given as direct housing loan in the Rural and Semi-urban Areas. Further, 30 per cent of the allocation be channelled by way of Term Loans to the Housing Finance Companies, Housing Boards and other Public Housing Agencies primarily for augmenting the supply of serviced land and constructed units. The Balance of 40 per cent of the allocation will be available for subscription to the Guaranteed Bonds and Debentures of the Nationaal Housing Bank and Housing and Urban Development Corporation. Commercial Banks had provided housing finance amounting to Rs 186.21 crore, Rs 194.43 crore and Rs 237 crore for 1986, 1987 and 1988 respectively. For the financial year which ended on March, 1990, the total housing finance allocation is likely to be of the order of Rs 322 crore.

NATIONAL HOUSING BANK

The National Housing Bank (NHB), which started its operation from July, 1988, has been actively involved in the development of housing finance in the Country. NHB launched the Home Loan Account (HLA) Scheme on July 1, 1989, with a view to mobilising resources from the house-holds, specifically for construction of houses/flats. About three lakh people have become HLA Scheme Members till the end of August, 1990 and the amount of deposits collected through the Public Sector Banks totalled Rs 35 crore. By January, 1991, refinance assistance provided by NHB to all categories of eligible primary lenders i.e. Scheduled Commercial Banks, State Cooperative Banks, Housing Finance Companies, State-level Apex Cooperative Banks amounted to Rs 300 crore. In its Land Development and Shelter Projects, it has till December, 1990, approved 26 Detailed Project Reports costing Rs 188.04 crore in seven states and involving development of 14,000 plots and construction of over 15,000 dwelling units of various categories. It has also approved a Project for Manufacturing of Sand-lime Brick with a project cost of Rs nine crore for Equity Participation of Rs 25 lakh under its policy to support Building Material Industry as a part of real sector intervention.

For augmenting the reasources of the National Housing Bank, the Paid-up Capital of the Bank has been raised to Rs 200 crore from Rs 150 crore by the contribution of the Reserve Bank of India who have also sanctioned a long-term loan of Rs 125 crore to NHB out of National Housing Credit (Long- Term Operations) Fund established by the RBI. NHB has also issued 20 year bonds with 11.5 per cent interest worth Rs 160 crore. It has launched in July, 1990, a three year Non-transferable/Non-negotiable Capital Gain Bonds Scheme carrying nine per cent interest rate per annum and providing 100 per cent tax exemption on capital gains arising out of sale/transfer of long-term capital assets like land, building, shares and securities, jewellery, etc. NHB has successed in securing a loan from the Overseas Economic Cooperation Fund (OECF), Japan, for 2.970 billion Yen i.e. Rs 40 crore (approx.) at the current exchange rate.

INDUSTRIAL DEVELOPMENT BANK OF INDIA

The Industrial Development Bank of India (IDBI), which was established under the Industrial Development Bank of India Act, 1964, is the principal financial institution for providing credit and other facilities for development of industry, co-ordinating working of institution engaged in financing, promoting or developing industries and assisting development of such institution. IDBI has been providing direct financial assistance to large and medium large industrial concerns and also helping small and medium industrial concerns through banks and state-level financial institutions.

Paid-up Capital of IDBI, wholly subscribed by the Government, as at the end of March, 1990, stood at as Rs 637 crore. Cumulatively, upto end-March 1990, IDBI had sanctioned and disbursed assistance aggregating Rs 42,191 crore and Rs 30,197 crore respectively. Total assistance outstanding as on 31 March, 1990, net of repayment by borrowers, was Rs 17,891 crore. Net Profit of IDBI during April 1989-March 1990 period was Rs 269 crore.

INDUSTRIAL RECONSTRUCTION BANK OF INDIA

The Industrial Reconstruction Bank of India (IRBI) was set up as a Statutory Corporation on 20 March, 1985, by reconstituting the erstwhile Industrial Reconstruction Corporation of India Limited. IRBI has been established as a principal institution to provide credit and investment needed for rehabilitation of Sick Industrial Undertakings and promotion of industries in general. Prevention and containment of industrial sickness are the main objectives of IRBI. Authorised Capital of IRBI is Rs 200 crore and Paid-up Capital as on 31 March, 1990, was Rs 135.30 crore. By March 1990, cumulative financial assistance sanctioned and disbursed stood at Rs 1029.75 crore and Rs 765.20 crore respectively.

EXPORT-IMPORT BANK OF INDIA

Export-Import Bank of India (Exim Bank) is the principal financial institution in India for coordinating working of institutions engaged in financing export and import trade. Exim Bank was established on 1 January, 1982, for Financing, Facilitating and Promoting Foreign Trade of India. Over the eight years which ended on 31 March, 1990, Export Contracts valued at Rs 4,471 crore had been financed by the Export-Import Bank of India. Aggregate utilisations of loans and advances as on 31 March, 1990, were Rs 4,042 crore. Paid-up capital of the Bank was Rs 233.80 crore as on 31 March, 1990, with an authorised capital of Rs 500 crore. Net profit on accumulated basis reached Rs 135 crore. Its reserves aggregated Rs 98.90 crore.

INDUSTRIAL CREDIT AND INVESTMENT CORPORATION OF INDIA LIMITED

Industrial Credit and Investment Corporation Of India Limited (ICICI), was established in 1955 as a Public Limited Company to encourage and assist Industrial Units in the Country. It provides term-loans in Indian and Foreign Currencies, Underwrites Issues of Shares and Debentures, makes direct subscriptions to these Issues and guarantees payment for credit made by others. Paid-up Capital of ICICI by March, 1990, was Rs 91.56 crore. Cumulative Project Finance Sanctions by March, 1990, were Rs 10,222.47 crore comprising Rs 4,456.89 crore in Foreign Currencies and Rs 5,765.58 in Indian Currency. This assistance was spread/over 3023 Companies for 6,409 Projects. Disbursements amounted to Rs 6,895.62 crore comprising Rs 3,313.28 crore in Foreign Currencies and Rs 3,582.34 crore in Indian Currency. Outstanding Portfolio amounted to Rs 4,297.50 crore.

INDUSTRIAL FINANCE CORPORATION OF INDIA

The Industrial Finance Corporation of India (IFCI) is the First and the Oldest National-level Development Finance Institution established soon after India's Independence by a Statute known as the Industrial Finance Corporation Act, 1948. Set-up with the objective of making Medium and Long-term Credits more readily available to industrial concerns in India, IFCI's role now extends to the entire industrial spectrum in the Country. The facilities and services being provided by it can be deemed to fall broadly under (a) project finance, (b) financial services and (c) promotional services. Under its project finance and financial services, upto the end of March, 1990, the Industrial Finance Corporation of India had sanctioned assistance of the order of Rs 8,721.98 crore to 3,564 industrial projects. Over-all disbursements by March, 1990 were of the order of Rs 5,474.64 crore, of which, cash disbursements, i.e., after excluding guarantees issued, were of the order of Rs 5,397.34 crore. Total outstandings as on the 31 March, 1990, net of repayment by borrowers, was Rs 4,529.62 crore.

IFCI's Paid-up Capital as at the end of March, 1990, was Rs 100 crore and its reserves on that date were of the order of Rs 327.42 crore. Upto 31 March, 1990, IFCI had utilised a sum of Rs 39.28 crore on its Variegated Promotional Schemes.

SMALL INDUSTRIES DEVELOPMENT BANK OF INDIA

Small Industries Development Bank of India (SIDBI) was established as wholly owned subsidiary of the Industrial Development Bank of India (IDBI) under the Small Industries Development Bank of India Act, 1989, as the Principal Financial Institution for Promotion, Financing and Development of Industries in the Small-scale Sector as also for co-ordinating the functions of institutions engaged in promotion, financing and development of industries in the Small-Scale Sector. SIDBI started its operations from 2, April, 1990, and is engaged in providing assistance to the Small-scale Industrial Sector in the Country through other institutions like State Financial Corporations, Commercial Banks, State Industrial Development Corportions, etc.

The Paid-up Capital of the Small Industries Development Bank of India which is wholly subscribed by IDBI is at present Rs 125 crore. The outstanding portfolio of IDBI totalling about Rs 4,000 crore relating to the Small-scale Sector as on 31 March, 1990, was transferred to SIDBI from second April, 1990.

TOURISM FINANCE CORPORATION OF INDIA LIMITED

Tourism Finance Corporation of India Limited (TFCI), is an All-India Financial Institution sponsored by the Industrial Finance Corporation of India at the instance of the Government of India and set-up as a Public Limited Company in early 1989 for funding tourism and related projects.

While the Authorised Share Capital of TFCI Rs 100 crore, the Paid-up Capital is Rs 50 crore contributed by the All India Financial/Investment Institutions and Public Sector Banks. TFCI provides all forms of financial assistance for new, expansion or modernisation of projects with Capital Cost of Rs one crore and above for setting-up and for development of tourism, tourism-related activities, facilities and services which inter-alia include hotels, resorts, amusement parks, Safari Parks, Ropeways, Convention Halls, Transport-travel and Tour Operating Agencies, etc. Under the Extant Interest Subsidy Scheme of the Department of Tourism in the Government of India, four to five Star Category Hotels get one per cent interest subsidy on loan upto Rs 75 lakh and One, Two, and Three Star Category Hotels get interest subsidy of three per cent on the entire Rupee Term Loan. Cumulative Sanctions and disbursements by the Tourism Finance Corporation of India Limited amounted to Rs 96.27 crore (66 projects) and Rs 28.31 crore respectively as at the end of November, 1990.

STATE FINANCIAL CORPORATION

The State Financial Corporation (SFC) which was set up under the State Financial Corporation's Act, 1951, form an integral part of the structure of Development Financing Institutions in the Country. SFC's numbering 18 at present, provide financial assistance to the Small and Medium Enterprises by way of Term loans, Direct Subscription to Equity/Debentures, discounting of Bills of Exchange and Guarantees. SFCs also provide Equity-type Assistance under the Special Capital and Seed Capital Schemes to entrepreneurs having viable projects but lacking adequate funds of their own-self.

Paid-up Capital together of the 18 State Financial Corporations stood at Rs 730 crore as at the end of Mrach, 1989. Cumulatively, upto the end of March 1989, SFC's had sanctioned and disbursed assistance aggregating Rs 8,651 crore and Rs 6,356 crore respectively. Total assistance outstanding at the end of March, 1989, net of repayment by borrowers, was Rs 45 crore. Net Profit of all the SFCs together, for the year ending March 1989 amounted to Rs 20 crore.

SHIPPING CREDIT AND INVESTMENT COMPANY OF INDIA LIMITED

Consequent upon abolition of the Shipping Development Fund Committee (SDFC) with effect from third April, 1987, the Shipping Credit and Investment Company of India Limited (SCICI) was entrusted with the functions of erstwhile SDFC. The guiding principle of the company is the development of the shipping industry and financing projects on the strength of their commercial viability after careful evaluation of each project. The Authorised Capital of SCICI is Rs 100 crore. Share Capital is to the extent of Rs 50 crore and Issued, Subscribed and Paid Up Capital is held by Public Financial Institutions and Nationalised Banks.

The Shipping Credit and Investment Company of India Limited, which has been appointed as *Designated Person* of the Government of India has sanctioned loans aggregating to Rs 637.24 crore for shipping activities out of which loans aggregating Rs 396.85 crore were disbursed till March end 1990. SCICI's assistance for Deep-sea Fishing Activities amount to Rs 80.71 crore and disbursements amount to Rs 10.81 crore.

LIFE INSURANCE CORPORATION OF INDIA

Life Insurance Corporation of India (LIC) was established on 1 September, 1956, to spread the message of Life Insurance in the Country and mobilise people's savings for Nation-building Activities.

Prior to the Nationalisation of Insurance Companies, 245 private insurers used to operate from 97 centres catering mostly to urban population and their total business in force stood at Rs 1,220 crore by the end of 1955. LIC with its Central Office in Bombay and Six Zonal Offices at Bombay, Calcutta, Delhi, Madras, Hyderabad and Kanpur operates through 69 Divisional offices in important cities and 1,528 Branch Offices. The corporation also transacts business in Foreign Countries and has offices in Fiji, Mauritius and the United Kingdom. LIC is associated with Two joint Ventures Abroad in the field of insurance namely, Kenindia Assurance Company Limited, Nairobi, United Oriental Assurance Limited, Kuala Lumpur and International Agencies Company Limited, Baharain.

The Life Insurance Corporation of India has achieved the growth rate of 35.1 percent securing new business in India of Rs 23,268.97 crore under 74.04 lakh Policies during the financial year 1989-90 as against Rs 17,222.84 crore under 59.79 lakh Policies during the previous year. *With 3.60 lakh Agents, Life Insurance Company has the largest field organisation in the Country.*

Till March end 1990, the LIC's Group Insurance Portfolio also showed progress with the sum assured of Rs 23,049.64 crore under 39,494 schemes covering 163.02 lakh people registering growth rates of 15 per cent, 23 per cent and 11 per cent respectively. Notable Group Schemes for Weaker Sections are for Sweepers, Weavers, Rickshaw-pullers, Construction Workers, Farmers, Forest Labourers, Taxi-drivers, Blind Workers, Fishermen, Porters, etc. The Group Insurance Scheme for the Landless Agricultural Labourers has also been allowed to continue beyond 14 August, 1990, for a further period of three years. The schemes introduced by the Life Insurance Corporation include Jeevan Dhara and Jeevan Akshay for Pensioners and Bima Niwas Yojana for Housing Finance.

GENERAL INSURANCE CORPORATION OF INDIA

The General Insurance Industry in India was Nationalised in 1971 and a Government Company known as the General Insurance Corporation of India (GIC) was formed by the Central Government in November, 1972. With effect from January, 1974, the erstwhile 107 Indian and Foreign Insurers which were operating in the Country prior to Nationalisation, were grouped into Four Operating Companies, namely, (i) National Insurance Company Limited, (ii) New India Assurance Company Limited, (iii) Oriental Insurance Company Limited and the (iv) United India Insurance Company Limited. All the above Four Subsidiaries of GIC operate all over the Country competing with one another and underwriting various classes of General Insurance Business including reinsurance except for Aviation Insurance of the National Airlines and Crop insurance which is handled by the General Insurance Corporation of India. The Four Subsidiary Companies of GIC operate on an All-India Basis through Regional, Divisional and Branch Offices. As compared to 799 offices in 1973, the network consisted of 4,031 offices as on 31 March, 1990.

The Gross Direct Premium Income of the General Insurance Industry in 1989-90 amounted to Rs 2174 crore as against Rs 2,248 crore in 1988-89 (for 15 months from First January, 1988 to 31 March, 1989) recording an increase of 20.9 percent (annualised growth) over the Premium Income of 1988-89. Similarly, the Net Premium Income of the general Insurance Industry in India in 1989-90 was Rs 1,909 crore as against Rs 1,971 crore in 1988-89 (for 15 months from First January, 1988 to 31 March, 1989) representing a growth of 21.1 per cent (annualised growth) over that of 1988-89. The net profits of the industry during 1989-90 rose to Rs 258 crore as against Rs 229 crore during 1988-89 (for 15 months from First January, 1988 to 31 March, 1989) representing a growth of 40.9 percent (annualised growth) over that of 1988-89 despite adverse under-writing experience.

The important insurance Schemes/Initiative introduced by the General Insurance Industry during the last few years are as under:-

PERSONAL ACCIDENT INSURANCE SOCIAL-SECURITY SCHEME FOR POOR FAMILIES

Personal Accident Insurance Social-Security Scheme for Poor Families Scheme was introduced with effect from 15 August, 1985, and was extended in phases to 214 Districts in the Country upto 14 August, 1988. With effect from 15 August, 1988, it has been introduced in all the remaining Districts and, thus, the Whole Country now stands covered under the scheme. The scheme covers all people in the age group of 18 to 60 whose Total Family Income from all sources does not exceed Rs 7,200 per annum. Rs 3,000 is paid to the dependents of the deceased earning member of poor families comprising of landless labourers, small farmers, traditional craftsmen, etc. The entire premium cost of the scheme is borne by the Central Government and no premium is paid by the insured under the scheme.

HUT INSURANCE SCHEME FOR POOR FAMILIES IN RURAL AREAS

Hut Insurance Scheme for Poor Faimilies in Rural Areas was introduced from 1 May, 1988. The scheme provides relief to poor families in rural areas when their huts and belongings are destroyed by fire. Poor families whose annual income does not exceed Rs 4,800 are eligible under the scheme. In the event of loss due to fire, the Insurance Company will pay Rs 1,000 for hut and Rs 500 for belongings in the hut. The entire premium cost in respect of the scheme is borne by the Central Government and no premium is to be paid by the hut dwellers under the scheme.

MEDICAL INSURANCE SCHEME

The Medical Insurance Scheme known as *Mediclaim* was introduced with effect from Third November, 1986. The scheme provides for Six Categories of Benefits ranging from Rs 13,600 to Rs 94,000 at an Annual Premium ranging from Rs 200 to Rs 1,300 per person. Till recently, the scheme was for the age group of five years to 70 years. With effect from 15 March, 1990, the minimum age limit for children has been reduced from five years to three months provided the parents of the concerned children are also covered. The policy is now available to persons above the age of 70 years also with reduced limits of liability. The total benefit amount will be reduced by ten percent in respect of persons between the age of 70 and 75 years and by 20 per cent for the persons above the age of 75 years.

OVERSEAS MEDICAL INSURANCE SCHEME FOR INDIAN CITIZENS TRAVELLING ABROAD

An Overseas Medical Insurance Scheme for Indian Citizens Travelling Abroad was introduced from 15 August, 1984, by all the Four Subsidiaries of the General Insurance Corporation of India. The policy is granted to persons undertaking bonafide trips for business, official and professional purposes including training, assignments officially sponsored and for holidays either in groups or on individual basis. There are two plans i.e. 'Plan A' and 'Plan B' under which the Policies are issued. Under 'Plan A', the benefits are upto the limit of US $ 50,000 and the countries of Visits are world-wide excluding USA and Canada. Under 'Plan B', the Policy is upto the limit of US $ 1,00,000 and the Countries of Visits are World-wide including USA and Canada. The period of insurance is limited to 180 days under both the Plans. The premium rates vary from Rs 274 to Rs 2,424 under 'Plan A' depending upon the period of 1-14 days to 148-180 days. Similarly, under 'Plan B', the premium rates vary from Rs 309 to Rs 4,133 depending upon such period. The policy indemnifies payment of specified expenses for medical treatment taken by the insured person outside India as a result of total injury caused for sickness/disease contracted while on the overseas travel subject to normal exclusions under the Policy.

CANCER INSURANCE SCHEME

The Cancer Insurance Scheme was introduced by the New India Assurance

Company Limited from 11 July, 1985, in collaboration with the Indian Cancer Society. To be eligible for the Policy, at present, one has to become a member of the Indian Cancer Society. The Annual Premium under the policy is Rs 100 and is payable alongwith Rs 100 per year by way of Membership Fees of this Society. The total limit for medical expenses covered is Rs 50,000 in the aggregate which includes medical expenses for the diagnostic procedure and treatment of Cancer.

CATTLE INSURANCE

One of the major thrust areas for the benefit of the rural population is Insurance of Cattle and Live-Stock like Camels, Sheep, Goats, Pigs, Rabits, Poultry, Ducks, Quails, etc. Premium income from Live-stock Insurance Business consisting mainly of Cattle Insurance, by the four subsidiaries amounted to Rs 86.04 crore during 1989-90 as against Rs 102.72 crore during 1988-89 (for 15 months from First January, 1988 to 31 March, 1989 reflecting an annualised growth of 4.7 per cent. The number of animals covered during 1989-90 was 1.99 crore compared to 2.33 crore during 1988-89 for 15 months from January, 1988 to 31 March, 1990, representing a growth of 6.7 per cent on annualised basis.

The procedures for settlement of claims have also been simplified in many respects. Besides Cattle and Live Stock Insurance, following are the other Insurance Covers available for the benefit of the Weaker Sections:- (1) Composite Package Insurance for beneficiaries of IRDP, etc, in respect of dwelling premises and other belongings, (2) Group Personal Accident Covers for Fishermen, Toddy-tappers, Factory Workers, etc., (3) Package Policy for Handloom Weavers, (4) insurance cover for Artisans, Village, Cottage and Small-scale Industries including Bio-gas Plants, (5) Janta and Gramin Personal Accident, (6) Agricultural Pumpsets, (7) failure of wells and (8) Pedal Cycles and Rickshaws.

CROP INSURANCE

The Crop Insurance Scheme was conducted on an experimental basis from 1973 to 1984. From the commencement of Kharif Season of 1985, a Comprehensive Crop Insurance Scheme was introduced by the Union Agriculture Ministry. The General Insurance Corporation of India is administering this scheme on behalf of the Government of India (Ministry of Agriculture). The Central Government and the State Governments share the premium and claims in the ratio of 2:1. The premium has been fixed at a flat rate of one per cent for Oilseeds, Pulses and two per cent for Rice, Wheat and Millet. The scheme applies to all farmers securing loans from Commercial, co-operative and Rural Banks for the cultivation of Rice, Wheat, Millet, Oilseeds and Pulses in the states participating in Scheme. Initially, the sum insured was fixed at 150 per cent of the loan advanced. However, since Kharif Season of 1988, the sum insured has been reduced from 150 per cent to 100 per cent of the crop loan subject to a maximum of Rs 10,000 per farmer.

It is for the concerned State Governments to issue the necessary notifications for taking part in this scheme at the beginning of each Kharif/Rabi Season. Although the scheme covers the entire Country, some of the states like Punjab, Haryana, Rajasthan and some North-Eastern States have not participated in this scheme. Even the states which joined the scheme did not notify all the areas for coverage.

'ODD LOT' SHARES

The 'Odd Lot' Shares Scheme under which small investors are able to realise full-value of their 'odd lot' holdings, was initially introduced in Bombay. It has now been extended to all the Four Metropolitan Cities and inter-linked. These centres have been inter-linked to enable 'Odd Lot' Holders in any one of these centres to dispose-off their holdings at any other centre. The number of companies whose are accepted under the scheme has also been increased to about 125.

HOUSING FINANCE

The General Insurance Corporation of India and its Indian Subsidiary Companies are already granting loans to the State Governments, HUDCO and DDA for construction of houses. To contribute further in the National Effort to accelerate house building activity in the Country, a Housing Finance Company, namely GIC Grih Vitta Ltd., has been set-up by the corporation and the Indian Subsidiary Companies to provide long-term finance by way of loans for construction/purchase of houses/flats for residential purposes to individuals. The emphasis will be on giving loans to the middle and lower income groups. Part of the capital for this company is being raised from the Financial Institutions like ICICI, IFCI, UTI, HDFC and SBI Capital Markets Limited.

GENERAL INSURANCE SUBJECTS

The General Insurance Corporation of India in collaboration with the Central Board of Secondary Education, has introduced General Insurance Subjects in the vocational stream at 10+2 level in some Selected Schools in the Country from 1988-89 academic session. In the Two Years Course at the Plus Two Level, various General Insurance Subjects will be taught. Successful students with 50 per cent of marks will be appointed as Apprentice Assistants and will be paid stipend of Rs 1,000 per month for one year. Thereafter, subject to satisfactory performance, they will be appointed as Assistants in the Regular Grade. After three years of service as Assistants, they can appear for Departmental Test for promotion to Officer's Cadre.

GENERAL INSURANCE CORPORATION OF INDIA'S INVESTMENTS

A major portion of investible funds of the industry is channelised into socially-oriented sectors of the Indian Economy. The total funds invested as at the end of March, 1990. were Rs 3,978 crore against Rs 3,403 crore as at the end of March, 1989.

PUBLIC LIABILITY POLICY

Following the Bhopal Gas Tragedy, there has been an increased awareness of the Public Liability Insurance and the Insurance Industry has devised a Public Liability Policy for covering industrial accidents and pollution liability to suit the requirements of insuring institutions. The question of enacting a Suitable Legislation for introduction of mandatory public liability insurance for hazardous chemical industries has been under active consideration of the Government of India also and, accordingly, Public Liability Insurance Bill, 1990, was introduced in the Lok Sabha in May, 1990. Besides, the industry has also devised product liability cover for domestic products as well as export products.

Also cover for loss or damage caused by acts of terrorism in conjunction with cover for riots, strikes and malicious damage, has been introduced from 1 January, 1987.

SOLATIUM FUND

The Solatium Fund Scheme which provides compensation to victims of hit-and-run road accidents where the vehicle can not be identified, was till lately being administered by the Ministry of Surface Transport. From First July, 1989, the General Insurance Corporation of India is administering the scheme through its four subsidiary companies. Benefits under the scheme as per the New Motor Vehicle Act have also been enhanced from Rs 1,000 to Rs 2,000 in case of grievous hurt and from Rs 5,000 to Rs 8,500 in case of loss of life.

LOSS PREVENTION ASSOCIATION OF INDIA

The General Insurance Industry is supporting the Loss Prevention Association of India Limited which is active in the promotion of loss prevention in various fields in the Country.

FOREIGN INVESTMENT POLICY

The Government welcomes foreign investment in area of priority to supplement capital resources and know-how for rapid Industrial Development. Its policy towards foreign investment is selective and aims at stimulating Industrial Growth through induction of advanced technology and promoting exports. Foreign Capital generally is not permitted in banking, commerce, finance, plantation, trading, and consumer industries although in special financial services, selective entry is considered, Normal limit for Foreign Equity Investment Participation is 40 per cent which is relaxable on merits in individual cases, main considerations being technology and exports. Within broad framework of the selective policy, a process of consultation and dialogue on a continuing basis has been initiated with Major Capital and Know-how Exporting Countries to identify and smoothen out bottlenecks to facilitate larger inflow of direct foreign investment. Certain degree of flexibility has been introduced for investment in India for investors from Oil Exporting Developing Countries and Non-resident Indians.

NON-RESIDENT INDIANS INVESTMENTS—NEW INITIATIVES

A large number of schemes/facilities were announced in 1982 to attract Non-resident Indians (NRIs) Investment. The Government still attaches importance to investment by NRIs and has been taking a number of steps to make such investments attractive. The policies and shcemes framed to attract investment by Non-resident Indians are continuously reviewed in the light of suggestions received from different quarters including NRIs and NRI organisations. Constant effort is also being made to streamline the procedures with a view to remove irritants and bottlenecks for prospective NRI Investors. The Government has recently set up a Coordination Committee to sort out any problem that might arise in the implementation of Government decisions and to respond to advice given by various NRIs and NRI organisations and suggestions received in this regard. The Coordination Committee would be headed by an Additional Secretary in the Department of Economic Affairs and would also comprise of Senior Representatives from the Ministries of Commerce, External Affairs, Industry, Environment and Forests and the Reserve Bank of India.

The following changes have been made recently in NRI Schemes; (i) Non-resident Indians/Persons of Indian Origin have now been allowed to import under OGL Capital Equipments and Instruments appearing in Appendix I, Part B of Import Trade Control Policy 1990-93. Capital Goods other than restricted list can also be imported under OGL upto a value of Rs 55 lakh CIF value instead of Rs 35 lakh landed cost provided the NRIs are meeting the entire cost from their own saving Abroad and are not seeking any repatriation of investment including profit earned on it; (ii) duration of stay in India of NRIs has been extended upto 150 days instead of 90 days to maintain NRI Status; (iii) FCNR/NRE Account Facility for automatic extension has been granted by the RBI for renewals of fixed deposits from the date of maturity; (iv) the Government has approved NRIs participation in Air Taxi Service and has extended their operations for a number of other stations; (v) Special Status of NRIs has been given to evacuees from Kuwait upto 31 March, 1991 and (vi) The Second Series of NRI Bonds which will mature after seven years have been issued. The maturity proceeds of these Bonds, together with interest thereon, are non-repatriable.

UNIT TRUST OF INDIA

The Unit Trust of India (UTI) was established as a Statutory Corporation on 1 February, 1964, under the Unit Trust of India Act, 1963. It commenced its operations from 1 July, 1964. The UTI mobilises the savings of the community by selling "units" and invests the funds in shares and other securities.

The UTI has so far introduced 38 different schemes to suit the preferences of various classes of investors. The main scheme of the UTI is the Unit Scheme, 1964. The UTI is at present managing 'Two Country Funds of India'. The First Fund called "The India Fund" was launched abroad by the UTI and Merrill Lynch Capital Markets in July, 1986, for enabling Non-resident Indians and other persons outside India to invest in the Securities Markets of India. The Shares of the Fund are listed on the London Stock Exchange. The Second Fund called "The India Growth Fund Inc." was launched abroad by the UTI and Merrill Lynch in August, 1988. This Fund is registered with the Securities and Exchange Commission (SEC) of the United State. The shares of the Fund are listed on the New York Stock Exchange. The investible funds of the UTI as on 30 June, 1990, were to the extent of Rs 17,496 crore as against Rs 11,835 crore as on 30 June, 1989.

Apart from the UTI, there are six Mutual Funds operating at present in India. These Funds have been set up by the Life Insurance Corporation of India, the State Bank of India, Canara Bank, Indian Bank, Punjab National Bank and Bank of India.

STOCK EXCHANGES

Stock Exchanges play an important role in the mobilisation of financial resources for the Corporate Sector. They provide an organised market for transactions in Shares and other Securities.

There are at present 19 Stock Exchanges in the country which are recognised by the Government under the Securities Contracts (Regulation) Act, 1956. These exchanges are located at Bombay, Calcutta, Madras, Delhi, Ahmedabad, Ludhiana, Kanpur, Jaipur, Indore, Pune, Hyderabad, Bangalore, Cochin, Guwahati, Mangalore, Patna, Bhubaneshwar, Rajkot and Vadodara. While Stock Exchanges are managed by their Governing Boards and Executive Directors, policies relating to their regulation and development are laid down by the Ministry of Finance. The Government have also constituted the Securities and Exchange Board of India (SEBI) in April, 1988, for the orderly development and regulation of Securities Market and investor protection.

MINTS AND PRESSES

India Security Press, Nasik Road, consists of Two Units—Stamp Press and Central Stamp Depot. Stamp Press prints postal stationery, postal and non-postal and impressed stamps, judicial and non-judicial stamps, cheques, bonds and other security documents like Passports, etc., besides a number of miscellaneous items of security required by the Central and state governments and Quasi-government Organisations. Central Stamp Depot distributes finished products made by the Stamp Press to various indentors. Currency Note Press, Nasik Road, prints and supplies Currency Notes of One Rupee and Bank Notes of Rupee Two, Five, Fifty and Hundred Denominations. Security Paper Mills, Hoshangabad, manufactures paper for making Currency Notes and other Security Paper. Bank Note Press, Dewas, consists of Two Production Units, viz., main press for printing Bank Notes of the denominations of Rs 20, 50 and 100 and ink factory for the manufacture of Security Inks. Security Printing Press, Hyderabad, prints postal stationery and other security forms for the Southern States.

Mints at Bombay, Calcutta, Hyderabad and NOIDA Mint Coins to meet the Country's Requirements. India is now self-sufficient in the manufacturing of Coins. Bombay Mint being the only Gold Refinery in the Country, it undertakes Refining of Gold for Licensed Gold Dealers and Production of Medals for Defence Services Institutions, etc. The Mint also manufacturers working standards of Weights and Measures for various states. Calcutta and Hyderabad mints besides Minting Coins, manufactures medals for various Government Departments. While NOIDA Unit, which has been recently commissioned, is built on modern lines, the Other Units are also being modernised with a view to increasing production.

EXPENDITURE

ESTABLISHMENT DIVISION

The Establishment Division is the nerve centre for the entire gamut of the service conditions of the Central Government Employees having financial content. Its activities are therefore spread over a vast spectrum of their service conditions right from the date of appointment to the date of retirement. Basically, these include revision/prescription of pay scales, fixation of pay and various allowances. The proposals received from various Ministries/Departments of the Government of India seeking clarification in regard to revision of pay scales, prescription of pay scales, increments, deputation allowance and cadre review of various categories of posts are examined in this Division Ministry (Finance) keeping in view the equity and comparable relativities among various groups of the Government Employees with reference to their functions, responsibilities and duties.

This Division is also concerned with the setting up of Pay Commissions and follow-up of their reports. It also serves as a Nodal Division to provide necessary clarifications relating to prescription/implementation of recommendations of the Pay Commission to various Ministries/Departments. The 'Implementation Cell' is also set up to keep a watch on the progress of implementation of Pay Commission's recommendations. It advises the Ministries/Departments on matters relating to various Committees set up to review pay-structure/allowances. The proposals received from various Ministries/Departments of the Government of India seeking clarification in regard to the Central Civil Service (RP) Rules are also dealt with in this Department. Within this Department. The Reports of various Committees set up to review the pay structure and allowances by various Ministries/ Departments relating to specialised posts such as of doctors, engineers, scientists, lecturers, etc., are also examined in this Division in consultation with Ministries/Departments concerned.

The Establishment Division is also concerned with various allowances, such as Compensatory City Allowance, House Rent Allowance, classification and upgradation of cities, Special Duty Allowance, Dearness Allowance, etc, and also tenders general advice on matters relating to re-imbursement of tuition fee, children's education allowance, honorarium, over-time Allowance, etc.

The Division is also concerned with the rules relating to grant of Travelling Allowance/Daily Allowance including mileage allowance, etc., and in this regard, offers clarifications/advice on the proposals received from various Ministries/Departments. It deals with policy matters relating to various aspects of Pension and Subsistence Allowance. All the work relating to the Central Government Group Insurance Scheme, 1980, is also the concern of the Establishment Division and review of the scheme is undertaken from time to time. It also monitors the utilisation of funds accummulated under the above scheme which are channelised into housing schemes. It is administratively concerned with the G.F.R., D.F.P.R. and other Financial Rules and Service Rules bearing financial content. It renders advice to various Ministries/Departments on matters relating to these Rules as also exercises the powers for relaxation and interpretation.

In respect of use/purchase and maintenance of staff cars in various Ministries/Departments of the Government of India, this Establishment Division issues necessary guidelines through amendments to the Staff Car Rules or by way of issue of separate instructions. This Division is also concerned with policy matters relating to Productivity Linked Bonus Scheme and in regard to the grant of ad-hoc bonus to the employees of the Central Government from time to time. The Pay Research Unit of the Establishment Division collects, compiles and analyses data on expenditure incurred on pay and various types of allowances by the Central Government Departments. It also exercises checks on establishment expenditure of the Central Government by way of issuing instructions from time to time in matters of creation of posts as also effecting economy in various spheres of the activities of the Government.

On the basis of the resources assessed and State's. Plans approved for 1990-91, a Budget Estimate of Rs. 9,963 crore for 1990-91 (including Rs, 287 crores as special Central Assistance for the development of Hill Areas) was made. Against this, Rs. 9,452 crore was actually released to the States during the 1990-91. Further against the Budget Estimate of Rs. 603 crore of Centre's contribution to the State Calamity Relief Fund, Rs. 686 crore was actually released during 1990-91. The increased amount of release is due to advance releases, in excess of the allocation for 1990-91, made to Andhra Pradesh and Orissa to meet their expenditure necessitated by cyclones and floods, etc. In addition, deficit grant of Rs. 2,396 crore, against the Budget Estimate of equal amount, was released to the States. Further, Non-plan loans of Rs. 521 core was released to the States to enable them to meet their gap in resources and a part of their opening deficits.

PLAN FINANCE II

Plan Finance-II Division deals with all matters relating to the Central Plan. These cover the estimates of resources for Central Plan including Internal and Extra Budgetary Resources, allocation of outlays among different Ministries/Departments of the Central Government, appraisal of Plan Projects/Schemes before they are submitted to Public Investment Board (PIB)–Expenditure Finance Committee (EFC), etc. The Division also attends to the work relating to wage settlement in various Public Sector Undertakings.

Plan Finance II is also the Secretariat of the Public Investment Board. The PIB considers investment proposals of the Central Government Ministries in regard to their Public Sector Undertakings. Under the existing guidelines, Central Sector Projects costing Rs. 20 crore and above are considered by PIB. The projects costing over Rs. 5 crore but less than Rs. 20 crore are considered by the Expenditure Finance Committee. Secretary (Expdr.) is the Chairman of the PIB and Joint Secretary (Plan Fin. II) acts as the Secretary to the board.

During January, 1, 1990, to December 31, 1990, 20 meetings of PIB were held and 58 projects with a total capital cost of Rs. 33404.94 crore were recommended for approval. Of these, 27 proposals involving a capital cost of Rs. 16037.38 crore were new approvals. The areas of new investment were:-

(Rs. in crore)

Steel	133.13
Power	5035.90
Petroleum	10065.94
Coal	519.08
Surface Transport	189.93
Agriculture	93.40
Total	16037.38

During the same period, the Committee of PIB also considered Nine proposals from different Ministries/Departments for first stage clearance. A list of the projects which were considered and accorded first stage clearance is given in the Annexure.

Estimation of Internal and Extra Budgetary Resources for financing the Annual Plan of the Central Public Sector Undertakings is an important activity of the Plan Finance II Division. Before the commencement of the Annual Plan discussions by the Planning Commission, the Plan Finance Division obtains the details of estimates of receipts and expenditure of different Public Sector Undertakings from the Financial Advisers and in consultation with the representatives of the Administrative Ministries, Planning Commission and Public Sector Undertakings, prepares the Estimates of Internal and Extra Budgetary Resources available from the Public Sector Undertakings for their Annual Plan.

Plan Finance Division is also actively associated with the discussions held in the Planning Commission in the formulation of the Annual Plan and Five-Year Plans of the Central Ministries. On the basis of Estimates of Internal and Extra Budgetary Resources for Public Sector Undertakings prepared in the Division, discussions held in the meetings of PIB/EFC, Plan Fiaance Division assists the Planning Commission in finalising the Annual Plan/Five-Year Plan Outlays for different Schemes/Projects of the Central Ministries. After the formulation of the Plan, all issues relating to the enhancement/re-allocation of Plan Outlays, resources, etc, are also dealt with in this Division. Quarterly Reports on the Action Plan regarding investment decisions made by the PIB are sent to the Cabineht Secretariat from this Division.

List of Projects accorded First Stage Clearance by the Committee of PIB during the period January, 1990 to December, 1990.

S.No.	Name of the Proposal	Administrative Ministry/Departments
1.	Bharat Petroleum Corporation Limited Proposal for the setting up of Sire MTPA grassroot refinery and related crude pikline in Central India-First Stage Clearance.	Petroleum and N.G.
2.	Project for the manufacture of Pyrite Based Phosphatic Fertilizers (SSP) at Saladipura, Distt. Sikai, Rajasthan by M/s. PPCL-Ist Stage clearance.	Fertilizer
3.	Proposal for Cochin Phase IIE Expansion of FACT-Ist Stage clearance regarding	Petroleum & N.G.
4.	KIOCL's proposal for setting up of a Sponge Iron Plant in Mangalore.	Steel
5.	Modernisation of Converter Shops and Hot Strips Mill of Bokaro Steel Plant of SAIL-Ist stage clearance.	Steel
6.	Setting up of a 60 MA Natural Gas Based Power Plant or Maruti Udyog Limited Gurgaon.	Public Enterprises

S.No	Name of the Proposal	Administrative Ministry/Departments
7.	Preperation of DFR for the construction of Expressway from Vadodara to Bombay.	Surface Transport
8.	Setting up of A 500000 TPA Catalytic Reformer Unit at Mathura Refinery.	Petroleum and NG
9.	IOCs proposal for setting up a 3 MTPA Crude Distillation Unit at Gujarat Refinery.	Petroleum and N.G.

FINANCE COMMISSION

Under the Constitution, a Finance Commission is to be constituted every fifth year or at such earlier time as the President considers necessary. It makes recommendations to the President as to (i) the distribution between the Union and the States of the net proceeds of taxes which are to be or may be, divided between them and the allocation between the States of the respectives shares of such proceeds; (ii) the principles which should govern the grants-in-aid of the revenues of the States in need of such assistance out of the Consolidated Fund of India; and (iii) any other matter referred to the Commission by the President in the interest of sound finance. The recommendations of the Commission together with an explanatory memorandum as to the action taken thereon are laid before each House of Parliament. Nine Finance Commissions have alrsady been constituted since the commencement of the Constitution.

The Ninth Finance Commission subbmitted its first report for 1989-90 on 29 July, 1988. The Government accepted the recommendations of the Commission regarding devolution of Income Tax, Union Excise Duties, additional duties of excise in lieu of Sales tax, grants in lieu of tax on railway passenger fares, financing of relief expenditure and debt relief. In regard to grants-in-aid, the Government accepted the recommendation of the Commission with the provis that the recommendation relating to grants-in-aid for meeting requirements of the revenue component of the State Plan may be kept in view by Planning Commission while finalising funding arrangements for Annual Plans of States for 1989-90. The report alongwith an 'explanatory memorandum' on action taken on recommendations contained therein was placed on the table of Each House of Parliament on 2 September, 1988.

The Ninth Einance Commission submitted its Second Report, covering the five-year period commencing on First April, 1990, on 18 December, 1989. The Report alongwith an 'explanatory memorandum' on action taken on the recommendations contained therein was placed on the Table of each House of Parliament on 12 March, 1990.

The Commission has recommended transfer of Rs. 1,06,036 crore by way of share in Central Taxes and Duties and grants-in-aid. The scheme of devolution of taxes and duties confers net non-Plan surplus of Rs 38,032 crore on Eleven States. The Commission has recommended grants in-aid of revenues of certain States under substantive provision of ARTICLE 275 (1) of the Constitution towards meeting their non-plan revenue gap as assessed by the Commission for five years-1990-95. These grants aggregate to Rs 6,016 crore. The grants-in-aid recommended by the Commission to certain States to cover a part of the deficit of such State Governments on Plan Account for the years commencing from First April, 1990, aggregate to Rs 9001 crore. These grants will be taken into account by the Planning Commission as a resource for financing State's Plans.

For financing relief expenditure the Commission has recommended replacement of the present system of margin money. The Commission has recommended the constitution of Calamity Relief Fund for each State to which the Centre should contribute 75 per cent in the form of non-plan grant and the balance 25 per cent shall be contributed by the State Government out of its own resources. Centre's contribution in the form of Non-plan Grant would be Rs 603 crores annually during 1990-95. The Commission has recommended that the quantum of grant in lieu of tax on Railway Passenger Fares for 1990-95 shall be Rs 150 crore annually.

The Commission has recommended that the share of the States in the proceeds of income tax should be 85 per cent. Regarding the criteria, the Commission recommended that ten per cent of shareable proceeds of income tax should be distributed among the states on the basis of contribution, 45 per cent on the basis of distance of the per capita income of a State from that of the State with the highest per capita income multiplied by the 1971 population of the State concerned, 22.5 per cent on the basis of population of the State concerned, 22.5 per cent on the basis of population of the State in 1971, 11.25 per cent on the basis of composite index of backwardness compiled by the Commission and the remaining 11.25 per cent on the basis of the inverse of per capita income multiplied by the population of the State in 1971. The State's share in Union Excise Duties has been retained at 45 per cent. The Commission recommended a separate formula for the distribution of State's share in Union Excise Duties. The Commission recommended that 25 per cent of shareable proceeds of Union Excise Duties should be distributed among the States on the basis of 1971 population, 12.5 per cent on the basis of Income Adjusted Total Population (IATP); 12.5 per cent on the basis of Index of backwardness, 33.5 per cent on the basis of 'distance' of per capita income and the remaining 16.5 per cent among the States with deficits, in proportion of deficit of each State to the total of all State's deficits.

Regarding debt relief, the Commission's Recommendations included (i) elongation of maturity period of future Central Loans for State Plans from 15 years to 20 years with 50 per cent loans enjoying a grace period of Five years; (ii) consolidation of State Plan Loans advanced during 1984-89 and outstanding as on 31 March, 1990 and its rescheduling to 15 years with relief in repayments during 1990-95 ranging from Five per cent to Ten per cent; (iii) write-off of certain Central Loans; (iv) moratorium of two years (1990-92) on repayment of principal and payment of interest in respect of special loans granted to Punjab. The total debt relief on all accounts to

States under the scheme of the Commission in respect of loans outstanding at the end of 1989-90 was estimated at Rs. 976 crore by the Commission.

The recommendations of the Finance Commission regarding devolution of taxes and duties, grants-in-aid to cover Non-Plan Gap on Revenue Account and part of deficits on plan revenue account and financing of relief expenditure have been accepted by the Government. In regard to debt relief, the Government have accepted the recommendations relating to write-off/rescheduling and elongation of the maturity period of future Central Loans for State Plans from 15 years to 20 years with 50 per cent loans enjoying a grace period of Five years. The recommendation of the Commission relate to Grants in lieu of Tax on Railway Passenger Fares has also been accepted by the Government.

CONTROLLER GENERAL OF ACCOUNTS

Organisation of Controller General of Accounts was set up as a part of the Ministry of Finance, Department of Expenditure, in October, 1975, to administer matters pertaining to departmentalisation of accounts of the Union. These include prescribing the form of accounts of the Union. These include prescribing the form of accounts of the Union. These include prescribing the form of accounts relating to the Union and State Governments; laying down of accounting procedures, framing and revising rules and manuals relating thereto; overseeing the maintenance of adequate standards of accounting by Central (Civil) Accounts Officers; consolidation of the monthly and annual accounts of the Government of India (including preparation of summary civil appropriation accounts) and the administration of rules under ARTICLE 283 of the Constitution relating to the Custody, etc, of the Consolidated Fund of India, the Contingency Fund of India and the money credited to Public Accounts.

The CGA prepares the condensed form of the appropriation accounts (Civil) and the finance accounts of the Union Government. These after audited by the Comptroller and Auditor General are placed on the table of both the Houses of Parliament alongwith the report from the latter. A serious attempt is being made to computerise the consolidation of accounts.

Controller General of Accounts Office is also responsible for administering the scheme for payment of pension to the Central Government Civil Pensioners by Public Sector Banks and for prescribing procedure payment to Civil Pensioners.

A Central Pension Accounting Office (CPAD) which was set up to further streamline payment of pension to Civil Pensioners and Freedom Fighters has commenced functioning w.e.f. January, 1990. This Office now authorises pension on Public Sector Banks directly on receiving PPOs from the POO issuing Authorities and has simplified transfer of pension cases from one place to another.

Central Pension Accounting Office deals with the PPOs of all Civil Pensioners of Central Government, Freedom Fighters and Former Members of Parliament. It is also administering a liberalised scheme for disbursal of pension to migrants of Kashmir Valley. It also administers the pension grant (Central Civil Pensioners). The CPAD is responsible for accounting of all the above pension payments.

DIRECT TAXES

Direct Taxes play a significant role in the tax system not only as a revenue source but as a powerful instrument for achieving social and economic objectives. Firstly, Direct Taxes help make Tax System progressive and reduce disparities in distribution of income and wealth. Secondly, Direct Taxes subserve the strategy of planning in many ways. Differential taxation of savings in specified assets helps promote savings and induce flow of investment into desirable channels. In India, both Income Tax as well as Taxes on Capital, are designed to serve these objectives.

The Income Tax Department administers a number of Direct Taxes Acts, namely, the Income-tax Act, 1961, the Wealth Tax Act, 1957, the Gift Tax Act, 1958, the Estate Duty Act, 1953 (Discontinued in respect of death on or after 16 March, 1985), the Companies (Profit) Surtax Act, 1964, (discontinued from 1 April, 1988), the Hotel Receipts Tax Act, 1980, (levy discontinued from 28 February, 1982), and the Expenditure Tax Act, 1987.

Table 13.7 gives figures of revenue collection under the various Major Direct Taxes and table 13.8 shows incidence of Income Tax at selected-levels.

TABLE 13.7 DIRECT TAXES

(Rs Crore)

Taxes	Amounts of revenue collected				
	1986-87	1987-88	1988-89	1989-90	1990-91 (upto Oct, 90)
1. Corporation Tax	3,159.96	3,432.92	4,407.21	4,768.65[1]	897.92
2. Income-Tax	2,878.97	3,192.43	4,241.25	4,937.98[1]	1,865.66
3. Taxes on Wealth	174.15	100.58	115.06	177.41	117.44
4. Estate Duty	13.39	8.02	6.11	4.13	2.57
5. Gift Tax	9.26	8.23	5.59	7.94	(–) 0.32
6. Expenditure Tax	—	5.69	36.58	73.10	43.98

1. Figures are provisional.
2. Expenditure Tax was introduced from First November, 1987.

COMBATING TAX EVASION

The Income-Tax Department is making continuous efforts to Combat Tax Evasion, Unearth Black Money and curb the generation growth and use of Black Money in the Economy. The tempo of search and survey operations was maintained during 1990. During this year, the Income-Tax Department conducted 3,888 searches which resulted in the seizure of unaccounted assets worth Rs 165.54 crore. The corresponding figures for the earlier year i.e. 1989 were 4,715 searches resulting in seizure of unaccounted assets worth Rs 114.42 crore. Emphasis on locating new assesses through door-to-door survey operation of business and professional premises continued. Accordingly, during 1990, 7,13,944 (Upto October, 1990) premises were surveyed as against 6,37,051 premises surveyed during 1989.

Information was also collected from various sources regarding financial transaction of assesses for varification with reference to their assessment records and to locate potential assesses. As a result of these measures, 4,37,081 new assesses have been brought on the records of the department. The number of prosecutions against Tax Offenders were also stepped-up and, during 1990, 8,391 prosecutions were launched as against 7,273 during 1989.

TABLE 13.8 INCIDENCE OF INCOME-TAX AT SELECTED-LEVELS (CASES OF INDIVIDUALS—FINANCIAL YEAR 1990-91)

Net Income (Rs)	Tax (Including Surcharge)	Effective Rate (Per cent)
22.000	Nil	Nil
25,000	600	2.40
30,000	1,600	5.33
40,000	4,600	11.50
50,000	1,600	15.20
60,000	11,600	19.33
70,000	15,600	22.28
80,000	21,168	26.46
90,000	25,488	28.32
1,00,000	29,808	29.81
1,50,000	56,808	37.87
2,00.000	83,808	41.90
3,00,000	1,37,808	45.94
4,00,000	1,91,808	47.95
5,00,000	2,45,808	49.16
10,00,000	5,15,808	51.58

INDIRECT TAXES

The two important sources of the Central Government revenue are Customs and Central Excise Duties. *These two account for about 80 per cent of the total revenue of the Union.* The figures of revenue collected in respect of these two duties during the last three years are given in the table below:-

REVENUE FROM EXCISE AND CUSTOMS DUTIES (RS CRORE)

	1988-89[1]	1989-90 (RBE)	1990-91 (BE)
Union Excise Duties	18,841	22,103	25,125
Custom Duites	15,805	17,877	21,460

1. Fiscal accounts figures
BE-Budget Estimates
RBE-Revised Budget Estimates

The taxation measures undertaken during the recent years are intended with a view to achieve reforms in the structure of Customs and Central Excise Duties and are designed to further the basic objectives of economic growth, equity, simplicity and built-in revenue raising capacity. The main thrust of Tax Reforms has been to simplify and rationalise the Duty Structure. Simultaneously, attempts have been made to mobilise resources in a manner that does not hurt the common-man and, at the same time, helps to curb conspicuous consumption. The major emphasis has been on strengthening impulses for growth and exports.

Significant changes in the Duty Structure have been brought about so as to improve the quality products made by the industry. Duty Reliefs are given to deserving sectors particularly the ones relating to Small-scale Industry, agriculture and environmental protection.

SALES TAX WING

Sales Tax is the most important source of revenue of the states. Levy of Taxes on sale or purchase of goods taking place within a state is a State subject of taxation. Administration of the Central Sales Tax Act, 1956, under which tax is levied on inter-state sale of goods has been entrusted by law to the state governments who collect and retain the proceeds of such tax. Total collection of Sales Tax covering Central Sales Tax, Tax on Motor Spirit and Purchase Tax on Sugarcane during 1989-90 is estimated at Rs 13,689.56 crore. Total collection of Additional Excise Duty in lieu of Sales Tax for 1990-91 on Sugar, Tobacoo and Textiles is estimated at Rs 1,641.44 crore.

ANTI-SMUGGLING DRIVES

Drive against smuggling, tax evasion and other economic offences includes, among others, strengthening of the existing intelligence network against smugglers and their activities, improving surveillance and surprise checks of vulnerable areas, giving special attention to post-seizure operations such as adjudication, disposal of confiscated goods and prosecution, etc. Narcotic Control Bureau, a separate authority was also created during 1986 for co-ordinating efforts in preventing and combating trafficking in Narcotic Drugs and Psychotropic Substances. Government has also initiated steps to curb open display and sale of goods of foreign origin.

In addition to tackling of outright smuggling of contraband goods, Custom authorities take strict action against certain companies in the organised sector indulging in tax evasion, import-export frauds, Misuse of Duty Exemption Scheme, Evasion of Customs/Excise Duty and Foreign Exchange Violations. As a result of various anti-smuggling measures taken, goods worth Rs 628.84 crore were seized during 1990 (upto 1 December, 1990).

OPIUM AND POPPY

India is the largest producer and exporter of Opium in the World. Cultivation of Poppy and production and export of Opium are under the exclusive control of the Central Government. The Central Government has taken a number of steps to reduce the huge stocks of Opium which had accumulated because of gradual addition of over more than a decade. It has taken various measures to reduce the stocks and now reached a stage where yearly domestic production of Opium is less than the quantity exported and indigeneously consumed. During 1989-90, India had exported 537 Metric Tonnes of Opium while the quantity of Opium produced was 423 M.T's.

GOLD CONTROL

Gold (Control) Act, 1968, has been repealed by the Gold Control Repeal Act, 1990, on Sixth June, 1990. There are Two Gold Mines in the Country, namely Bharat Gold Mines Limited (BGML) and the Hutti Gold Mines Limited (HGML). Some Gold is also produced as a by-product by the Hindustan Copper Limited. With the repeal of the Gold Control Act, there is no restriction on the trade in Gold. However, the Gold Mines continue to sell Gold for industrial use through the distribution network of the State Bank of India besides market sales.

CORPORATE SECTOR

The First Company Legislation in India was an act for the registration of Joint Stock Companies enacted in 1850. This was followed by the Companies Act, 1913. As a result of the recommendations of the Committee under the Chairmanship of Shri C.H. Bhabha to make suggestions for Company Law Reforms, the Companies Act, 1956, was enacted as a Central Legislation. Prior to the enactment of this act, the administration of the Companies Legislation was the responsibility of the State Governments.

The Companies Act, 1956, has been in force for the last thirty-four years and during this period it has been amended over Sixteen Times. The amendments of 1969, 1974, 1977 and 1988 are of special importance. By the amendment of 1969, the system of appointing Managing Agencies or Secretaries or Treasurers in Companies was abolished. Under the 1974 Amendment, the Powers of the High Court relating to certain sections of the Companies Act were transferred to the Company Law Board. The scope of SECTION 43A was enlarged so as to treat large Private Limited Companies as deemed Public Limited Companies. A New SECTION 58A was inserted to regulate acceptance of deposits by the companies. SECTION 108A to SECTION 108H were introduced to check take-over bids by large groups (These Sections have since been transferred to the Monopolies and Restrictive Trade Practices Act, 1969). The 1977 Amendment inserted, inter alia, SECTION 634A enabling the Company Law

Board to enforce its orders under SECTIONS 17, 18, 19, 79, 141 AND 186 OF THE ACT as a decree of a Court of Law. The Companies Act, 1956, provides a variety of powers to the Central Government and the Company Law Board to monitor, regulate and control the affairs of the companies. The salient features of the 1988 amendments are: (a) the setting-up of an Independent Company Law Board to exercise such judicial and quasi-judicial functions as are presently being exercised either by the Court or the Central Government and proposed to be transferred to that Board; (b) dispensing with Government approval for managerial appointments and remuneration, subject to the fulfilment of certain statutory guidelines which are proposed to be incorporated in the act itself; (c) de-linking of the rates of depreciation from the rates specified under the Income Tax Act and laying down the rates of depreciation in the act itself to reflect the true and fair view of the state of affairs of the company; (d) protecting the interest of the investors by providing for intervention by the Company Law Board against non-payment of public deposits and certain other matters, Compulsory Redemption of Preference Shares in certain cases, requiring companies to disclose reasons for refusal to register transfer of shares, protecting the rights of the transferee pending mutation of his name in the register of members, and also, compulsory listing of all Public Issues; (e) reducing unnecessary cost or burden by requiring companies to attach only an abridged version of Balance Sheets and Auditor's Report to members; and (g) provision for disclosure of information relating to conservation of energy, technology absorption, foreign exchange earnings and outgo as well as particulars of employees having some minimum stake in the company and drawing remuneration in excess of that drawn by the Managerial Personnel.

The number of Joint Stock Companies, both Government and Non-Government, incorporated under the Companies Act, 1956 and at work in India as on 31 March, 1990, was 2,00, 896. Of these, 1,98,553 companies were limited by Shares, 302 with Unlimited Liability and 2,041 were Limited by Guarantee or were associations not for profit. The 1,98,553 companies limited by Shares had a Paid-up Capital of Rs 59,722 crore. These comprised 20,792 Public Limited Companies and 1,77,761 Private Limited Companies with Paid-up Capital of Rs 25,422 crore and Rs 34,300 crore respectively.

Table 13.9 shows the number of companies and Paid-up Capital (Government and Non-government taken together).

NEW REGISTRATIONS

During 1989-90, 21,692 companies were registered under the Companies Act. These included 20 Government Companies and 21,577 Companies with Liability Limited by Shares, Five Non-government Companies with Unlimited Liability and 90 Non-government Companies with Liability Limited by Guarantee and Associations not for profit. Of the 21,597 Companies Limited by Shares registered during the year, 1,296 were Public

TABLE 13.9 COMPANIES AT WORK

As on 31 March, 1990	Companies Limited by Shares						Companies with unlimited Liability (Number)	Companies Limited by guarantee and associations not for Profit (Number)
	Public Limited		Private Limited		Total			
	Number	Paid–up Capital (Rs crore)	Number	Paid-up Capital (Rs crore)	Number	Paid-up Capital (Rs crore)		
1	2	3	4	5	6	7	8	9
1951	12,568	566.6	15,964	208.9	28,532	775.4	—	1,213
1961	6,702	948.2	19,447	870.3	26,149	1,818.5	—	1,169
1971	6,690	2,091.5	23,632	2,422.2	30,322	4,513.7	—	1,220
1981	9,740	4,645.5	52,974	10,090.0	62,714	16,356.7	176	1,478
1982	10,543	6,267.0	61,859	12,668.5	72,402	18,935.5	219	1,496
1983	11,782	7,470.3	71,121	15,586.0	82.903	23,056.3	252	1536
1984	12,950	8,430.0	81,314	18,070.4	94,264	26,500.4	282	1,598
1985	14,568	9,888.5	92,801	20,197.9[1]	1,07,369	30,086.4[1]	295	1,677
1986	16,125	11,776.7[1]	1,06,034	23,907.5[1]	1,22,159	35,684.2[1]	298	1,739
1987	17,551	16,137.1[1]	1,20,635	26,72.8[1]	1,38,186	42,829.9[1]	299	1,817
1988	18,505	20,694.7[1]	1,37,044	27,81.9[1]	1,55,549	48,476.6[1]	309	1,879
1989	19,546	23,786.0[1]	1,57,692	32,457.0[1]	1,77,238	56,243.0	319	1,953
1990	20,792	25,422.0[2]	1,77,761	34,300.12	1,98.533	59,722.1[2]	302	2,041

1. Provisional
2. Preliminary

Limited Companies with an aggregate Authorised Capital of Rs 6,122 crore and 20,301 were Private Limited Companies with an aggregate Authorised Capital of Rs 1,852 crore.

CAPITAL ISSUES

Section 60 of the Companies Act requires that Prospectuses Issued by or on behalf of the companies or in relation to an intended company, inviting offers from the public for the subscription or purchase of any Shares or debentures be delivered to the Registrars of Companies for registration. SECTION 67 (3) provides that if the offer or invitation can properly be regarded as not being calculated to result, directly or indirectly in the Shares or Debentures becoming available for subscription or purchase by persons other than those receiving the offer or invitation, or otherwise as being a domestic concern of the persons making and receiving the offer or invitation, such offer or invitation shall not be treated as made to the public. Thus, Prospectuses or Issue of Shares or Debentures by Private Placement are not require to be registered with the registras. During the year ending 31 March, 1990, 262 Non-government and Non-financial Public Limited Companies delivered copies of Prospectus to the Registrars of Companies for Registration under SECTION 60 of the Act for raising an amount of Rs 4,232 crore from public as against 178 Prospectuses delivered by the companies in the previous year for raising Rs 1,663 crore. Of the 262 companies which issued Prospectuses during 1989-90, 223 companies (85.1 per cent) invited applications for Equity Share Capital. The remaining 39 companies invited applications for Equity Share Capital as well as debentures (Seven) or for Debentures only (32). The Issue of Debentures related to Fully Secured Convertible Debentures (25), Partly Convertible Debentures six and Non-convertible Debentures (one). Of the total amount of Rs 4,232 crore issued through the Prospectuses during 1989-90, Rs 746 crore (17.6 per cent) was in respect of Equity Shares and the balance of Rs 3,486 crore (82.4 per cent) for Debentures. Capital amounting to Rs 1,699 crore or 40.1 per cent of the total amount covered by the Prospectus, was offered to the public and the balance of Rs 2,525 crore or 59.7 per cent was earmarked for firm allotment to the promoters, directors, existing shareholders and employees of the company, Non-Resident Indians, Financial Institutions, Banks and State Industrial Corporations. While directors, promoters and their relatives account for 10.1 per cent of the amount earmarked for firm allotment, Non-Resident Indians accounted for 6.9 per cent, shareholders for 65.7 per cent and Financial Institutons and State industrial Corporations for 17.3 per cent.

COMPANIES HAVING CEASED TO WORK

During 1989-90, 307 companies went into liquidation or otherwise became defunct or ceased to work and were struck-off under SECTION 560 (5) of the Compaies Act, 1956. The comparative figures for some of the earlier years were: 1970-71 (472), 1980-81 (391), 1985-86 (263), 1986-87 (281), 1987-88 (208), and 1988-89 (200).

GOVERNMENT COMPANIES

The table gives the number and Paid-up Capital of Government Companies at work for selected years.

TABLE 13.10 GOVERNMENT COMPANIES AT WORK

As on 31 March, 1990	Public Limited		Private Limited		Total	
	Number	Paid-up Capital (Rs crore)	Number	Paid-up Capital (Rs crore)	Number	Paid-up Capital (Rs crore)
1	2	3	4	5	6	7
1957	39	18.9	35	53.7	74	72.6
1962	41	23.5	113	606.2	154	629.7
1967	65	77.1	167	1,314.4	232	1,391.5
1972	107	156.0	245	2,213.1	352	2,369.1
1977	273	591.9	428	6,582.6	701	7,174.5
1982	374	2,183.9	520	11,125.4	894	13,309.3
1983	411	2,827.4	532	13,907.5	943	16,734.9
1984	427	3,315.6	546	16,195.0	973	19,510.6
1985	419	4,247.7	561	18,199.3	980	22,447.0
1986	443	5,356.0	577	21,731.8	1,020	27,087.8
1987	450	8,627.3	603	24,245.4	1,053	32,872.7
1988	520	12,086.8	584	25,082.5	1,104	37,169.3
1989	533	12,980.6	601	29,591.8	1,134	42,572.4
1990	538	13,982.7[1]	622	31,001,9[1]	1,160	44,984.6[2]

1. Provisional.

FOREIGN COMPANIES

As on 31 March, 1990, there were 469 Foreign Companies in India as defined under SECTION 591 of the Companies Act, 1956. The distribution of these companies, according to their Country of Origin, was UK 130, USA 101, Japan 45, France 19, West Germany 19, Italy, 12, Canada Seven, Hongkong 12, Pakistan Five, Bangladesh Five, Netherlands Seven, Switzerland Five, Sweden Eight, Australia Seven, Panama Nine, Belgium Four, Thailand Three, Nepal Three, UAE Three and others 65.

ECONOMIC SURVEY

ECONOMIC SURVEY FOR 1990-91 PRESENTED IN PARLIAMENT ON JULY 2, 1991 (HIGHLIGHTS AND SUMMARY)

HIGHLIGHTS

— GDP records a growth of about five per cent.

— Foodgrains Production around 176 million tonnes.

— Industrial Production up by 8.4 per cent.

- Good performance by the manufacturing sector; deceleration in the growth of Mining and Quarrying Sector.
- Infrastructure performance not encouraging.
- Crude Oil Production declines by 3.1 per cent due to agitation in Assam; Cause for concern.
- Wholesale Price Index up by 12.1 per cent and also 13.6 per cent increase in the Consumer Price Index for Industrial Workers.
- 38 per cent increase in the Trade Deficit.
- Oil Import Bill up by 72 per cent.
- Survey suggests India's External Sector must respond and adopt to structural changes in the World Economy.
- Fiscal adjustment in current financial year to be the centre-piece of the strategy,
- Survey calls for reduction in internal debt in the short-term and scaling down of external debt as a proportion of GDP in the medium-term.
- Reforms for elimination of waste and inefficiency.

SUMMARY

The Indian Economy had to face many uncertainties in 1990-91. The effects of the Political Situation at home and the persistent fiscal imbalances were accentuated by the Gulf Crisis which intensified strains on an already weak Balance of Payments Position. It is a measure of the inherent strength of Our Economy that it withstood the effects of these shocks rather well. It is also a measure of solid gains registered by Our Economy during the last forty years since Independence. Agricultural Output and Industrial Production continued to grow though their sustainability came under serious doubt. It is estimated that the growth of Gross Domestic Product (GDP) in real terms during 1990-91 will be about 5 per cent. However, due to the combined impact of internal and external factors, consumers have been faced with Double Digit Inflation and the Economy is faced with a serious Balance of Payments Crisis. On the domestic front, particular significance is attached to Medium-term, Large and Persistent Fiscal Imbalances which have strained the Balance of Payments Situation and accentuated inflationary pressures in the Economy. These, factors have been sharply exacerbated by the 'Third Oil Shock' and the related dislocations caused by the crisis and the War in the Gulf during 1990-91.

Despite normal monsoons, the price situation has turned out to be difficult. The annual rate of inflation in the Wholesale Price Index (WPI), on a point to point basis, works out at 12.1 per cent during 1990-91 as against 9.1 per cent during 1989-90. Measured in terms of the Consumer Price Index (CPI), the inflation rate is still higher at 13.6 per cent during 1990-91 as compared with only 6.6 per cent during 1989-90. Inflation hurts everybody especially when the price increase has been much in the case of several essential commodities. Weaker Sections are particular sufferers. Their income is not indexed also.

Experience has shown that money supply growth in India is strongly influenced by the behaviour of the Budget Deficit as well the behaviour of Foreign Exchange Reserves. Money supply growth decelerated in 1990-91 despite a sharp deterioration in the fiscal situation largely because of significant draw-down of Foreign Exchange Reserves. It is however obvious that a firm control of growth of money supply requires that the Monetary Policy should be closely coordinated with the Fiscal Policy and measures to contain money supply growth have to be backed by associated measures to contain the Fiscal Deficit estimated at 8.4 per cent of GDP. The postponement of the Regular Budget in February 1991 greatly increased the magnitude of efforts now required to achieve the targets set for 1991-92.

The Impact of the Gulf Crisis on the Balance of Payments Situation is very adverse and serious. Largely as a consequence of the increase in the Import Bill for Crude Oil and Petroleum Products, imports in rupee terms have risen by 21.9 per cent as against an increase of 17.5 per cent in the case of exports in 1990-91. Hence, the Trade Deficit has widened significantly in 1990-91. Combined with the loss of exports to, and remittances from West Asia, in particular Kuwait and Iraq, there has been a sharp deterioration in the Balance of Trade. In addition, both the Gulf Crisis and domestic political developments affected confidence Abroad in the Indian Economy. It became more difficult to borrow in the International Capital Markets. Receipts under Non-Resident Deposits also decelerated. All these led to a sharp decline in Foreign Exchange Reserves (excluding Gold and SDRs), from a level of about Rs 5,050 crore at the beginning of August, 1990 to Rs 4388 crore at the end of March, 1991. The decline in reserves would have been still larger if the Government did not resort to borrowing from the International Monetary Fund. The first recourse to the IMF was made during July-September, 1990, when India drew Rs 1173 crore which constituted 22 per cent of India's Quota and could be drawn upon without any conditions. This was followed by further recourse to the IMF in January, 1991, when Rs 3334 crore were borrowed under the Modified Compensatory and Contingency Financing Facility (CCFF) and the *First Credit Tranche* under a three month stand-by arrangement. Clearly, the real solution to the problem calls for urgent and effective measures to correct the structural imbalances which had led to the emergence of a chronic Balance of Payments Deficit in the first place.

AGRICULTURAL PRODUCTION

Foodgrains Production in 1990-91 is likely to be 176 million tonnes. Considering the estimated size of the Cane Crop, Sugar Production during 1990-91 may be about 115 lakh tonnes. Production of Cotton, however, may be less than last year because of excessive rains during 1990-91.

Production of Tea is estimated to have increased to 719 million Kg during 1990-91 compared with 703 million Kg recorded in 1989-90.

The Central Budget for 1990-91 introduced a Debt Relief Scheme under which outstanding loans upto Rs 10,000 for the non-wilfull defaulters engaged in Agriculture and other allied activities were waived by the Government. The Debt Relief Scheme underwent several changes in the course of the financial year 1990-91 since its announcement in the Budget for 1990-91. These changes in the scheme, in effect, increased Government's Financial Liability and led to a much greater fiscal burden on the exchequer than originally provided in the Budget. The Interim Budget for 1991-92 presented to the Parliament on March 4, 1991, estimated the burden at Rs 1500 crore for 1990-91 (RE) compared with the Budget Estimate of Rs 1000 crore. The Budget had also proposed Rs 1500 crore under the Debt Relief Scheme to the farmers for 1991-92. Given the scale of Debt Relief Scheme, it could affect both the profitability and credibility of the Indian Banking System. Unwittingly, it could also affect the farmer's incentive towards prompt repayment of bank debts in the future. The scheme contributed significantly to the deterioration in the fiscal situation in 1990-91. It also puts a constraint on supply of credit for productive purposes and, in turn, may affect the Rural Credit Delivery System.

INDUSTRY AND INFRASTRUCTURE

Despite the Gulf Crisis and several restrictions on Imports of POL and raw materials, the General Index of Industrial Production recorded a growth of 8.4 per cent in 1990-91 compared with a growth of 8.6 per cent in 1989-90. The Manufacturing Sector (which accounts for more than three-fourth of the total weight in the index) performed better by recording a growth of 9.2 per cent in 1990-91 compared with 8.6 per cent in 1989-90. In large measure, this was due to the combined impact of various promotional measures undertaken during the Seventh Plan Period. However, there was a deceleration in the growth of the Mining and Quarrying Sector from 6.3 per cent to 3.5 per cent and that of Electricity Sector from 10.8 per cent in 1989-90 to 8.6 per cent in 1990-91.

The performance of the Infrastructure Sector during 1990-91 was not encouraging. Electricity Generation, Production of Crude Oil and Refinery throughout showed evidence either of deceleration or actual decline. The Railways maintained the same growth rate in terms of the revenue earning goods traffic despite loss of freight traffic due to shortage of Diesel, Natural Calamities and Civil Disturbances. Production of Coal and Cargo handled at the Major Ports showed higher growth rates in 1990-91 compared with 1989-90. Within the Power Sector, the performance of both the Thermal and Nuclear Sectors was poor while Hydro-Electricity Generation exceeded the targets. The Average Plant Load Factor in the Thermal Sector at 53.8 per cent during 1990-91 was lower compared with 56.5 per cent during 1989-90.

The production of Crude Oil declined by 3.1 per cent during 1990-91 mainly due to the agitation in Assam. Even Refinery Production in terms of Crude Throughput declined by 0.3 per cent during 1990-91 compared to an increase of 6.9 per cent during 1989-90. The decline in the production of Crude Oil is a cause for serious concern in the context of the Current Balance of Payments Situation.

HUMAN RESOURCES

The development and utilization of human resources plays a vital role in improving the quality of life, reducing poverty and ensuring social justice. Economic development is a complex phenomenon which calls not only for higher growth of Gross Domestic Product but also for an improvement in the living conditions, whether health, education, employment, shelter, food or nutrition. It is with this end in view that the Economic Survey has for the first time introduced a separate Chapter on Human Resources. This Chapter, in brief, gives a snap shot view of the progress made so far in selected social sectors which have a direct bearing on human development.

In the sphere of education, gross enrolement of students in the Primary Schools increased from 43.1 per cent in 1950-51 to 99.6 per cent in 1989-90 and the overall literacy rate which was mere 18.3 per cent in 1951 improved to 52.1 per cent in 1991. However, Universal Elementary Education still remains an elusive goal as drop-out rates and sex disparity ratios continue to be significant. There has also been, since Independence, a substantial increase in the number of Institutions for Higher Education. But a proliferation in the number of Educational Institutions has not been accompanied by a commensurate improvement in standards and infrastructural facilities.

There has been significant progress in the sphere of health. The expectation of life at birth has increased from 32 years in 1951 to 59 years today. The death rate has shown a remarkable decline from 27 per thousand of population in 1951 to 10.2 per thousand in 1989. The birth rate, however, has not declined *Pari Passu* with death rates, so that the rate of population growth remains high.

In other sectors such as housing, water supply, sanitation, urban transport and family welfare both the quantity and quality of services are inadequate as judged by the needs of the society. A lot has been done in these areas in the last 40 years; but, still much more remains to be done. The Vastness of India and the large size of its population impose special demands on the social infrastructure. As the majority of people lack the ability to pay for the services, the Government has to play a greater role in providing social services at subsidised rates atleast to the Weaker Sections of the Community.

PRICES AND PRICE MANAGEMENT

The price situation has remained under pressure throughout the year 1990-91 despite a satisfactory monsoon and a Bumper Crop for the third year in succession. The annual rate of inflation in term of Wholesale Price Index (WPI) at 12.1 per cent in 1990-91 was higher than the rate of inflation at 9.1 per cent in 1989-90 The increase in the Consumer Price Index (CPI) for Industrial Workers was much higher at 13.6 per cent during 1990-91 compared with 6.6 per cent during 1989-90. The major concern about inflation during 1990-91 was that it seemed to be concentrated in essential commodities. The build-up in inflationary pressures in recent years is due to (a) fiscal imbalances, (b) supply and demand imbalances in sensitive commodities, and (c) the inflationary expectations. Apart from the underlying inflationary pressures arising from Macro-economic Imbalances, the increase in the prices of essential commodities during 1990-91 may also be attributed to increase in procurement prices of Cereals, sharp increases in prices of Edible Oils, Gulf Surcharge, and increase in transportation costs. The uptrend in prices manifest in the recent years still persists in 1991-92.

FISCAL AND MONETARY POLICY

The survey observes that Macro-Economic Imbalances characterised by High Fiscal Deficits and a growing Revenue Deficit have continued to remain a major source of concern for the Government during the past few years. The trend in the Budget Deficit represented a disquietening picture of shortfalls in revenue while expenditure continued to be incurred as budgetted. The same trends continued until the end of the year and the Interim Budget for 1991-92 presented on March 4, 1991, estimated the year and Budget Deficit at Rs 10,772 crore (RE). The increase in deficits is due to additional loans to the states, higher interest payments, inadequate provision for the rural debt relief, higher burden on account of fertiliser and food subsidies and shortfalls in revenues.

THE EXTERNAL SECTOR

In terms of rupees, exports registered a growth of 17.5 per cent in 1990-91 while imports recorded a relatively higher growth at 21.9 per cent. Consequently, the Trade Deficit increased by 38 per cent from Rs 7,735 crore during 1989-90 to Rs 10,664 crore during 1990-91. Net invisibles are also estimated to have declined during the year due to a likely fall in the net private transfers on account of the Gulf Crisis, a relatively slow growth of tourist traffic and a steady increase in interest payments on past borrowings. In the capital account, net aid disbursements in 1990-91 were higher than that during the previous years. Available information on other items of capital account also confirm the severe strain on the Balance of Payments.

During 1990-91, our Import Bill on Oil at Rs 10,820 crore was 72 per cent higher than that of Rs 6,273 crore during 1989-90. There was loss in exports to West Asia, particularly Kuwait and Iraq. There was also a shortfall in the remittances from West Asia because of the crisis and the War in the Gulf. Thus, the Balance of Payments situation was under great strain throughout the year. Despite sizeable borrowings from the IMF in July-September, 1990 and January 1991, the level of Foreign Exchange Reserves (excluding Gold and SDR) which was about 5,050 crore at the beginning of August, 1990, dropped to Rs 4,388 crore by the end of March 1991 and further to Rs 2,386 crore by the end of June 1991.

To meet the Balance of Payments Difficulties, India used its *Reserve Tranche* at the International Monetary Fund (IMF) during July-September, 1990, and obtained SDR 487.26 million (Rs 1173 crore). India alongwith other Oil Importing Developing Countries had pressed the IMF to modify the Compensatory and Contingency Financing Facility by including oil import element in it. This modification was approved by the IMF Board in Mid-November 1990. The IMF Board also approved on 18 January, 1991, the use of financial resources by the Government of India totalling SDR 1268.83 million equivalent of about US Dollars 1786 million or Rs 3334 crore. Of this, SDR 716.9 million, the equivalent of about US Dollars 1,009 million or Rs 1884 crore, was provided under the modified CCFF. The remaining SDR 552.93 million equivalent of US Dollar 777 million or Rs 1450 crore were made available under *First Credit Tranche* in a three-month stand-by arrangement. Thus, the entire amount of SDR 1268.83 million (about Rs 3334 crore) was made available to India for immediate drawal and has been received.

In order to improve the International Competitiveness of our exports and restrain demand for imports, the Reserve Bank of India adjusted downwards the value of rupee by seven to nine per cent in relation to major currencies on one July, 1991 and further by about 11 per cent on 3 July, 1991, resulting in overall appreciation of these currencies in relation to rupee by 21 to 23 per cent. In a bid to curb imports and reduce aggregate demand in the Economy, the Reserve Bank of India (RBI) also announced a Package of Monetary Measures on July 3, 1991, by raising the bank rate from 10 per cent to 11 per cent alongwith an increase in the Scheduled Commercial Bank's Deposit Rates, Lending Rates and the RBI Refinance Rates from 4 July, 1991. The Government also announced Major Structural Reforms in the area of Trade Policy on 4 July, 1991. These include a Uniform REP Rate (to be called EXIM Scrip and to be freely tradeable) of 30 per cent of the FOB Value of Exports, abolition of all Supplementary Licences except in the case of the Small-Scale Sectors and for producers of Life-saving Drugs/Equipment, Suspension of Cash Compensatory Support (CCS), abolition of additional licences granted to the Export Houses and increase of REP Rate for Advance Licence Exports from ten per cent of Net Foreign Exchange (NFE) to 20 per cent of NFE. Under the New Policy, REP would be the principal instrument for export-related imports, and the items now listed in the Limited Permissible List', imported by PMP Units, all capital goods, machinery and spares and unlisted OGL will, henceforth, be imported only through the REP Route.

It is expected that the adjustment in the exchange rate and the reform in

Import-Export Policy, at the beginning of July 1991, would help to stabilise the Balance of Payments Situation in the short-term and improve the Balance of Trade Situation in the medium-term. The exchange rate adjustment should facilitate the realisation of outstanding export receipts, as also remittances, and, at the same time, stem the destablising market expectations which were generated by perceptions about the exchange value of the rupee. With a time lag, it would also improve the Balance of Trade by stimulating the growth in exports and curbing the increase in imports. The enlargement and liberalisation of the Replenishment Licensing System would provide a new impetus to exports and create a mechanism for the needed import compression. In conjuction with the fiscal adjustment during the current financial year, these measures would make an exceedingly difficult Balance of Payments Situation manageable.

There are major new developments in the World Economy which are exceedingly important for the external sector, whether trade or payments, during the next few years. The International Trade Environment is also characterised by uncertainties attributable to the stalemate in the Uruguay Round of Multi-lateral Trade Negotiations, the Unification of the European Community into a Single Market by 1992 and the process of reform in the Eastern Europe which may lead to a major restructuring of these Economies. The shape of things to come in the International Monetary System and in the International Capital Markets would also be influenced by these developments. There is both opportunity and challenge in this process of change. The Indian Economy, in particular its External Sector, must respond and adapt to structural changes in the World Economy promptly rather than slowly and with flexibility rather than rigidity.

OUTLOOK

The Indian Economy is passing through a very difficult stage due to continued pressures on Balance Payments, Large Budget Deficits and Double Digit Inflation. These problems have persisted over the past few years. The situation had been aggravated by the Gulf Crisis as well as the uncertain Domestic Political Situation during 1990-91. Due to the shortage of Foreign Exchange, the Government had to impose certain restrictions on imports of capital goods, raw materials and components to the industry. There were also constraints on transport and other infrastructural facilities due to shortage of Petroleum Products during 1990-91.

The Current Economic Situation is indeed very difficult. Effective measures are needed to correct Fiscal Imbalances and to contain the Balance of Payments Deficit within manageable limits. The short-term correctives have to be viewed in a medium-term setting. Credible Structural Reforms designed to improve the efficiency and productivity of resources use are an inescapable necessity if the unavoidable fiscal adjustment is not to lead to stagflation but becomes an occasion to import a new element of dynamism to the growth process. One should not underestimate the enormity of the task. But the People of India have shown more than once in the past, that faced with a crisis, their response can fully match the requirements of the situation.

The centre-piece of the strategy for the Macro-Management of the Economy would be a Fiscal Adjustment during the current financial year, to be followed by Fiscal Consolidation thereafter. Such a Macro-economic Adjustments alone would enable us to manage the Balance of Payments situation and keep inflation within limits of tolerance. The restoration of Fiscal Balance is imperative because neither the Government nor the Country can continue to live beyond its means. The Economy has reached a stage where borrowing is not a solution. It only accentuates the problems. The time has come to adjust. This would require a reduction in the internal debt of the Government through a reduction of the Fiscal Deficit which would, in turn, reduce the burden of interest payments over a time-frame and help in reduction of the Revenue Deficit. In a medium-term, the endeavour must also to be reduce External Debt as a proportion of GDP and rely on our own resources to finance the process of development.

It must be recognised that even with a normal monsson, stable oil prices and the proposed Fiscal Adjustment, *Macro-Economic Management in 1991-92 is going to be a difficult task.* It would need to be supported by essential reforms in the Economic Policy and Economic Management as an integral part of the adjustment process which eliminates, waste and inefficiency. The thrust of the Reform Process should be to increase the efficiency and International Competitiveness of Industrial Production, to increase the productivity of investment, to ensure that India's Financial Sector is rapidly modernised and to substantially improve the performance of Public Sector Enterprises so that the Key Sectors of our Economy are enabled to maintain their technological and competitive edge in fast-changing market conditions. This process would have to be based on the resillience and the Strength of the Economy in terms of a potential for sustained growth in the Agricultural Sector and the Industrial Sector supported by the physical infrastructure and the human resources. It would then become possible to move the economy on to a higher growth path while maintaining our National Commitment to Policies and Programmes that protect the Vulnerable Sections of the Society.

14 Planning

PLANNING in India derives its objectives and social premises form Directive Principles of State Policy enshrined in the Constitution. Public and private sectors are viewed as complementary. Private sector covers not only organised industry but also small scale industries, agriculture, trade and a great deal of activity in housing, construction and other fields. Individual effort and private initiative are considered necessary and desirable in national endeavour on development with optimum of voluntary cooperation. Economic planning also envisages a growing public sector with massive investments in basic and heavy industries.

Planning Commission was set up in 1950 to prepare the blue-brint of development, taking an overall view of the needs and resources of the country. The composition of the Commission on 31 January, 1991, was as follows:

Shri P.V. Narasimha Rao : Chairman
Prime Minister
Shri Pranab Mukherjee : Deputy Chairman
Dr. Manmohan Singh : Minister of Finance
Shri Balram Jakhar : Minister of Agriculture
Shri Sharad Pawar : Minister of Defence
Shri H.R. Bhardwaj : Minister of State for Planning and Programme Implementation
Dr. (Mrs) Chitra Naik : Member
Dr. D. Swaminathan : Member
Dr. V. Krishnamurthy : Member
Dr. C. Rangarajan : Member
Dr. S.Z. Qasim : Member
Prof. J.S. Bajaj : Member
Dr. Jayant Patil : Member

FIRST PLAN

The First Plan (1951-56) had a two fold objective: to correct the dis-equilibrium in economy caused by the Second World War and partition of the country and also to initiate simultaneously a process of all-round balanced development. This was to ensure increase in the national income and steady improvement in living standards. Keeping in view large-scale imports of foodgrains in 1951 and inflationary pressures on economy, the Plan accorded the highest priority to agriculture including irrigation and power projects. About 44.6 per cent of the total outlay of Rs 2,069 crore in the public sector (later raised to Rs 2,378 crore) was allotted for its development. The Plan also aimed at increasing the rate of investment from five to about seven per cent of national income.

SECOND PLAN

In 1954, it was decided that main plank of economic policy should be to achieve a socialistic pattern of society. For this, basic criteria would be social gain and greater equality in income and wealth and not private profit. Second Plan (1956-61), therefore, sought to promote a pattern of development ultimately leading to a socialistic pattern of society in the country. In particular, it stressed that the benefits of economic development should accrue more to relatively less privileged sections of society. There should be a progressive reduction in concentration of income, wealth and economic power.

The Main aims of the Second Plan were: (i) 25 per cent increase in national income: (ii) rapid industrialisation with particular emphasis on development of basic and heavy industries: (iii) large expansion of employment opportunities and (iv) reduction of inequalities in income and wealth and a more even distribution of economic power. The Plan also aimed at increasing the rate of investment from about seven to eleven per cent of the National Income by 1960-61. It laid special stress on industrialisation—increased production of iron and steel, heavy chemicals including Nitrogenous Fertilisers and development of heavy engineering and machine-building industry.

THIRD PLAN

The Third Plan (1961-66) aimed at securing a marked advance towards self-sustaining growth. Its immediate objectives were to : (i) secure an increase in national income of over five per cent per annum and ensure a pattern of investment which could sustain this rate of growth: (ii) achieve self-sufficiency in foodgrains and increase agricultural production to meet requirements of industry and exports; (iii) expand basic industries like steel, chemicals, fuel and power and establish machine-building capacity, to meet requirements of further industrialisation within a period of ten years or so mainly from the country's own resources; (iv) utilise fully manpower resources and ensure a substantial expansion in employment opportunities, and (v) establish progressively greater equality of opportunity and bring about reduction in disparities of income and wealth and a more even distribution of economic power. The Plan aimed at increasing the National Income by about 30 per cent from Rs 14,500 crore in 1960-61 to about Rs 19,000 crore by 1965-66 (at 1960-61, prices) and per capita income by about 17 per cent from Rs 330 to Rs 385 during the same period.

ANNUAL PLANS

Indo-Pak conflict in 1965, two successive years of severe drought, devaluation of currency, general rise in prices and erosion of resources and delayed finalisation of the Fourth Plan were witnessed during this Plan.

Between 1966 and 1969, three Annual Plans were formulated within the framework of the Draft Fourth Plan. These constraints kept down the size of development outlay during this period.

FOURTH PLAN

The Fourth Plan (1969-74) aimed at accelerating the tempo of development and reducing fluctuations in agricultural production as well as the impact of uncertainties of foreign aid. It sought to raise the standard of living through programmes designed to promote equality and social justice. The Plan laid particular emphasis on improving condition of less privileged and weaker sections especially through provision of employment and education. Efforts were also directed towards reduction of concentration and wider diffusion of wealth, income and economic power.

The Plan aimed at increasing net domestic production at 1968-69 factor cost from Rs 29,071 crore in 1969-70 to Rs 38,306 crore in 1973-74. In terms of 1960-61 prices, this implied an increase from Rs 17,351 crore in 1968-69 to Rs 22,862 crore in 1973-74. Average annual compound rate of growth envisaged was 5.7 per cent.

FIFTH PLAN

The Fifth Plan (1974-79) was formulated against the backdrop of severe inflationary pressures. Major objectives of the Plan were to achieve self-reliance and adopt measures for raising consumption standards of people living below the poverty line. This Plan also gave high-priority to bringing inflation under control and to achieve stability in the economic situation. It targetted an annual growth rate of 5.5 per cent in National Income. Four Annual Plans pertaining to the Fifth Plan Period were completed. It was subsequently decided to end the Fifth Plan with the close of Annual Plan 1978-79 and initiate work for a new Plan for next five years with New priorities and programmes.

SIXTH PLAN

The Sixth Plan (1980-85) was conceptualised keeping in view achievements and shortcomings of the past three decades of planning. Removal of poverty was foremost objective of the Plan even though it was recognised that task of this magnitude could not be accomplished in a short period of five years.

The strategy adopted for the Plan consisted essentially in moving simultaneously towards strengthening infrastructure for both agriculture and industry so as to create conditions for an accelerated growth in investments, output and exports and provide through special programmes designed for the purpose, increased opportunities for employment especially in rural areas and unorganised sector and as well meeting minimum basic needs of people. Stress was laid on dealing with inter-related problems through a system approach rather than in separate compartments, greater management efficiency and intensive monitoring in all sectors and active involvement of people in formulating specific schemes of development at local level and securing their speedy and effective implementation.

Sixth Plan's actual expenditure stood at Rs 1,09,291.7 crore (current price) as against the envisaged total public sector outlay of Rs 97,500 (1970-80 prices) accounting for a 12 per cent increase in nominal terms. Average annual growth rate for the Plan was 5.2 per cent, targetted growth rate for this period. Details of the Sixth Plan outlays/expenditure are shown in table 14.1.

SEVENTH PLAN

The Seventh Plan (1985-90) emphasised on policies and programmes, the aim of which had been rapid growth in foodgrains production, employment opportunities and productivity within the framework of basic tenets of planning, namely, growth, modernisation, self-reliance and social justice. Due to overall favourable weather conditions, implementation of various thrust programmes and concerted efforts of the government and the farmers, the foodgrains production during the Seventh Plan grew by 3.23 per cent as compared to a long-term growth rate of 2.68 per cent during 1967-68 to 1988-89 and a recent growth rate of 2.55 per cent recorded in the eighties. To reduce unemployment and, consequently, the incidence of poverty, special programmes like Jawahar Rojgar Yojana have been initiated in addition to the already existing programmes. Due recognition has also been accorded to the role that small-scale and food processing industries can play in this regard. Various policy instruments have also been used to improve the productivity and the international competitiveness of the Indian economy. Instead of creating new facilities, the thrust has been on improvement of existing facilities and fuller capacity utilisation.

The total expenditure during the entire Seventh Plan stood at Rs 2,20,216.28 crore (current prices) as against the envisaged total public sector outlay of Rs 1,80,000 crore resulting in a 22.34 per cent increase in nominal terms. During this Plan Period, Gross Domestic Product (GDP) grew at an average rate of 5.6 per cent per year exceeding the targetted growth rate by 0.6 per cent. Table 14.2 shows the details of the Seventh Plan outlays/expenditure.

EIGHTH PLAN APPROACH

New approach to the Eighth Plan aims at correcting distortions by pursuing the following objective: (i) strengthening federal structure, (ii) decentralisation of authority, (iii) people's participation, (iv) development of the rural sector, (v) focus on women's role in economic activity and (vi) employment.

A major initiative undertaken by the reconstituted Planning Commission is new thinking on basic postulates of development process in order to ensure that Planning becomes an instrument of social justice economic emancipation, people's participation and cultural regeneration. Development is sought to be viewed as an holistic endeavour, inter-relating various dimensions, sectors and disciplines. The Draft Approach Document entitled "Towards Social Transformation" has already been endorsed.

The new approach to planning envisages reorientation not only of the focus and priorities of planning but also its mechanisms and procedures so as to achieve closer association of the Planning Commission with the State Planning Organisations on the one hand and public participation on the other. In the context of achieving faster development of rural sector and to concretise Government's decision to ensure the flow of 50 per cent of public sector outlay to agricultural/rural sectors, necessary steps have been taken and guidelines issued. Broadly, policy parameters like larger employment generation to guarantee 'right to work' to every citizen, reduction of income inequalities and regional imbalances, greater investment of resources in rural development programmes, development of village and small industries, ensuring greater efficiency of public enterprises, larger flow of resources to rural areas and achieving higher rate of agricultural production and productivity, have been kept in view in the finalisation of the Annual Plan 1990-91 outlays of Central Ministries/Departments.

OUTLAY AND INVESTMENT IN PLANS

The Seventh Plan envisaged a public sector Plan Outlay of Rs 1,80,000 crore. For the Annual Plan 1985-86, outlay was fixed at Rs 32,238.56 crore against which actual expenditure was Rs 33,059.90 crore. In addition, an amount of Rs 361.19 crore of Central Assistance was provided towards relief against natural calamities.

The Plan provision for 1986-87 was Rs 39,051.53 crore and actual expenditure amounted to Rs 39,149.11 crore. Central Assistance provided for relief against natural calamities during the year was Rs 556.05 crore. Against the Plan Outlay of Rs 44,698.43 crore for 1987-88, expenditure was Rs 42,920.55 crore. An additional amount of Rs 1,113.25 crore was also provided towards relief against natural calamities.

For 1988-89, the outlay had been fixed at Rs 49,817.83 crore against which revised extimate was Rs 49,442.17 crore. In addition, Rs 575 crore was provided as Advance Plan Assistance for relief against natural calamities. The Annual Plan for 1989-90 envisaged an outlay of Rs 57,597.52 crore, whereas the revised estimates showed an expenditure of Rs 57,016.89 crore. Only Rs 100 crore was provided for natural calamity during 1989-90. Details of the Plan Outlays for various sectors have been given in table 14.2.

ACHIEVEMENTS

During the period 1950-51 to 1988-89, Net National Product (NNP) at factor cost (N.I) at 1980-81 prices increased for Rs 40,454 crore to Rs

1,66,593 crore implying a compound growth rate of nearly 3.8 per cent per annum. During the First Five-Year Plan 1951-56, National Income increased by 3.6 per cent per annum as against the targetted growth rate of 2.1 per cent per annum. In the Second Five-Year Plan 1956-61, however, the growth rate actually achieved was 4.0 per cent per annum against the target of 4.5 per cent per annum.

In the Third Plan 1961-66, there was a sharp decline in the growth rate at 2.3 per cent per annum and fell well short of the target at 5.6 per cent per annum. This was primarily due to the steep fall in agricultural production and consequent decline in NNP at factor cost of 4.65 per cent per in the last year of the Third Plan. However, during the subsequent Three Annual Plans, the economy picked-up and the growth rate during 1966-69 was 3.7 per cent per annum.

For the Fourth Five-Year Plan 1969-74, the growth rate target was fixed at 5.7 per cent per annum in terms of NDP at factor cost. However, the actual growth rate achieved was only 3.3 per cent per annum.

The economy took an up-turn during the Fifth Five-Year Plan (1974-79). The rate of growth target fixed in terms of GDP at factor cost of 4.4 per cent per annum was over-achieved at 4.8 per cent per annum for the Fifth Plan. In 1979-80, however, the economy faced a severe drought resulting in decline of GDP at factor cost by 5.2 per cent over the previous year. The economy bounced back on the track during the Sixth Plan 1980-85 period when the rate of growth in GDP at factor cost at 5.6 per cent per annum surpassed the target of 5.2 per cent per annum.

Despite successive drought years in the first three years of the Seventh Plan 1985-90, the economy has performed fairly well and there are expectations that the target of 5.0 per cent per annum in GDP at Factor Cost for the Seventh Plan would be surpassed. The growth rates for the first four years of the Seventh Plan are as follows: 1985-86: 4.9 per cent, 1986-87: 4.2 per cent, 1987-88: 4.1 per cent, and 1988-89: 10.4 per cent. While including the growth rate of around 5.5-5.6 per cent in GDP for 1989-90, the average growth for the Seventh Plan works out to 5.6 per cent per annum.

The Index of agricultural production with the triennium ending 1969-70 as base, rose from 71.9 at the end of First Plan to 86.7 at the end of the Second Plan. During the Third Plan, performance of agriculture was not quite satisfactory. Widespread drought during 1965-67 slowed down the rate of growth in agricultural production and led to increased import of foodgrains and other items. Index of agricultural production reached the level of 80.8 in 1965-66 and 80.7 in 1966-67. These drought years also witnessed introduction of the best available agricultural technology for the first time in India in the form of high-yielding variety programme and multiple cropping programme. The following years recorded substantial improvement in agricultural production. As a result, the index, after recovering to 98.9 points in 1967-68, increased steadily to 112.4 in 1973-74. The next year 1974-75 was again a bad year for agriculture when the index declined to 108.6. This was followed by considerable improvement in

1975-76 when it touched 125.1. In 1976-77, the index registered a decline of 8.8 points and stood at 116.3 but again shot-up to 132.9 in 1977-78 and 138 in 1978-79. The year 1979-80 witnessed a fall by 21 points when index number of agricultural production came down touching 117. It recovered to 135.3 in 1980-81 and further increased to 142.9 in 1981-82.

During 1982-83, *Kharif* production was adversely affected due to way-ward monsoon which was inadequate, uneven and untimely. Even so, fall in foodgrains production was only marginal, a drop of 5.4 points in the production index. Agricultural production registered significant improvement in 1983-84 which was a near normal year from the point of view of weather conditions. Index of agricultural production increased from 137.5 in 1982-83 to 156.4 in 1983-84 and production of foodgrains touched a record-level of 15,237 crore tonnes. Weather conditions during 1984-85 were not very satisfactory. 'As a result, production of foodgrains declined to 14,554 crore tonnes and index number of agriculture production also declined marginally to 154.6. During *Kharif* 1985, onset of the south-west monsoon was delayed over the Central and Northern States and its behaviour during the season was erratic over many states.

However, weather conditions during the *Rabi* Season were on the whole rather favourable to crop production. Consequently, foodgrains output during 1985-86 stood at 15,044 crore tonnes. Weather conditions during 1986-87 continued to be unsatisfactory. Monsoon was delayed over Eastern States while the Southern States experienced dry spells leading to moisture stress conditions. As a result, only 14,342 crore tonnes of foodgrains production could be achieved during 1986-87. The year 1987-88 witnessed severe drought conditions in most parts of the country and the incidence of heavy floods in the Eastern States. The foodgrains production consequently further fell down to 14.035 crore tonnes. During 1988-89, production of foodgrains recorded a new peak of 16,992 crore tonnes indicating a substantial increase of 1,775 crore tonnes over the previous peak of 15,237 crore tonnes achieved in 1983-84. With the rainfall and weather situation being favourable during South-West Monsoon 1989, the total foodgrains production reached another record level of 17,063 crore tonnes. The target of foodgrains production for 1990-91 has been fixed at 17,660 crore tonnes.

On the irrigation side, the potential created from Major, Medium and Minor Schemes increased from 2.26 crore hectare in 1950-51 to 2,626 crore hectare at the end of the First Plan, 2,909 crore hectare by the Second Plan, 3,361 crore hectare at the end of Third Plan and 3.71 crore hectare by 1988-89. At the end of 1973-74, the potential created was 4.42 crore hectare. By 1978-79, it touched 5.446 hectare and by 1984-85, it reached 6,624 crore hectare. Potential created by 1989-90 was 7.78 crore hectare.

The total installed generating capacity (including non-utility), which was only 2300 MW in 1950, increased to 47,705 MW by the end of March, 1985. Against the capacity addition target of 22,245 MW in the public utilities, the actual additions made were 21,401 MW. With these additions, the cumulative installed capacity in the country by March, 1990, rose to 63,628 MW.

Under the rural electrification programme, 4.70 lakh villages had been electrified out of the 5.79 lakh total villages (as per 1981 census) by the end of the Seventh Plan achieving 81.3 per cent level of electrification. Upto January 1991, 4,74,605 villages were electrified. During 1990-91, so far, 3,779 villages are electrified.

Large investments in industrial and mineral sectors particularly from the beginning of the Second Plan have brought about a significant transformation in the industrial scene. Rate of industrial growth had not been uniform during this period. After a steady growth of about eight per cent during initial period of 14 years, there was a fluctuating trend in industrial growth rate approaching near stagnancy in 1966-68, going up to a level of 9.6 per cent in 1976-77 and dipping as far as down to minus 1.4 per cent in 1979-80. During the decade 1970-71 to 1979-80, average growth rate had been about four per cent per annum. Average growth rate of industry in the Sixth Plan Period was nearly six per cent which was a small improvement over the average of about 5.3 per cent in preceding five years.

Seventh Plan envisaged an average annual growth rate of 8.7 per cent in the output of industry sector. For 1985-86, the first year of the Seventh Plan, actual growth rate achieved was 8.7 per cent as per revised index of industrial production (Base 1980-81 = 100). In 1986-87, second year of the Plan, growth rate achieved was 9.1 per cent. In 1987-88, it was dampened to a large extent by decline in production towards the end of the year due to unprecedented drought. Growth rate recorded was only 7.5 per cent in 1987-88. Thus, over the first four years of the Seventh Plan, an average compound rate of 8.5 per cent per annum was achieved. Decline in industrial growth in 1987-88 was reversed and during 1988-89, growth rate of 8.8 per cent was achieved as compared to corresponding period of the previous year.

The Government initiated a number of measures late in the Sixth Plan and in early years of the Seventh Plan with the objective of removing constraints on industrial growth and providing a more liberal and congenial environment for development of industries. A number of steps were taken to liberalise industrial procedures relating to creation of capacity, import of technology, etc., to encourage competition in Indian Industry so as to ensure reasonable prices and improvement in quality. These include re-endorsement of capacities, delicensing of industries including specified MRTP and FERA Industries and broad-banding of a large number of industries, expecially in areas of high technology, industries linked with energy production and utilisation as well as mass consumer goods industries. Provisions of the MRTP Act and FERA Regulations were rationalised to facilitate entry into the industrial areas of high-priority. Expansion of existing units has been liberalised and investment in modernisation/renovation/replacement as well as export production has been exempted from industrial licensing. Licensing of new capacity has been liberalised and concept of minimum economic scale introduced to promote production efficiency taking advantage of economies of scale.

A number of policy measures have been initiated for development of specific industries like textiles, sugar, steel, electronics, etc. Steps have also been taken to tackle the problem of industrial sickness. These include : (i) system for early detection of industrial sickness introduced by the Reserve Bank of India; (ii) various steps for checking industrial sickness and promoting industrial revival evolved by Industrial Reconstruction Bank of India; (iii) setting-up of Board for Industrial and Financial Reconstruction, and (iv) setting-up of Small Industries Development Fund in IDBI to provide refinancing assistance not only for development, expansion and modernisation but also for rehabilitation of sick industrial units in the small-scale sector.

The Government has also set-up modernisation funds for Textiles and Jute Industries to cater to problems of those industries which account for a major share of industrial sickness.

The Government is to establish 100 growth centres to act as a nuclie for industrial growth and promote accelerated development especially in backward areas. Seventy such centres have been identified for development in various states and UTs in the first phase and their locations have been identified.

There has been an important milestone in the public sector steel capacity with most of the main units of The Stage-I of the Vishakapatnam Steel Plant having come on stream in 1990-91. The 4MT expansion programmes of Bhillai Steel Plant and Bokaro Steel Plant have also fully materialised during the year. [During 1990-91, India has become the largest producer of sugar in the World attaining the production level of 110 lakh tonnes.]

Education System recorded a phenomenal growth during the last three decades. Number of institutions went up from 2,31,278 in 1950-51 to 7,91,696 by 1988-89.

Enrolment of students in 1989-90 (classes I-VIII) was 1367.95 lakh comprising 809.64 lakh boys and 558.31 lakh girls. It was 89.69 per cent (103.42 per cent boys and 75.20 per cent girls) of the projected population in the age group 6-14. Because of rapid expansion in schooling facilities, literacy rose from 16.67 per cent in 1951 to 36.23 per cent in 1981. Nonetheless, there were over 43.7 crore illiterates in 1981. Seventh Plan envisaged to achieve universal elementary education and eradication of adult illiteracy in the age group 15-35 by 1990. However, these targets are now expected to be achieved by 1995.

The apex planning body at the State level is generally the State Planning Board consisting of the Chief Minister as the Chairman and the Finance and Planning Ministers of the State and some technical experts as members. The Department of Planning in the State Government provides the secretariat for the board. In many states, the planning process has been decentralised to the district level and in some States, even the sub-division or block levels. In most of the states, there is a district planning body known as the Distrcit Planning Board or District Planning Committee or District Planning Council comprising both official and Non-official Members. Some states also have a separate set-up consisting of functionaries like district planning officers, economist, credit planner, project appraiser, expert training coordinator and an area planner in some of the districts for the formulation of the district plans which are integrated with the State Plan.

The present Government wishes to give a thrust to genuine decentralisation from the Centre to the states and from the states to districts and below with responsibilities being matched by adequate resources at each level. Work in formulating the Eighth Five-Year Plan is in progress.

DEVELOPMENT OF INDUSTRIES

The history of the Organised Industry in India may be traced to 1854 when the real beginning of the Cotton-mill Industry was made in Bombay with predominantly Indian Capital and Enterprise. The foundations of the Jute Industry were laid near Calcutta in 1855, mostly with Foreign Capital and Enterprise. Coal-mining also progressed about this time. These were the only major industries which had developed substantially before the First World War. During and after the First and Second World Wars, a somewhat more liberal policy was adopted by the authorities, such as, a discriminating protection policy which gave impetus to industrial development. Several industries rapidly expanded and a number of new industries came up such as steel, sugar, cement, glass, industrial chemicals, soap, vanaspati and some branches of engineering. But their production was neither adequate in quantity for meeting even the low-level of internal demand nor was diversified in character.

PROGRESS DURING FIRST AND SECOND PLANS

During the First and Second Plans, the growth and diversification of industry were remarkable particularly in the Second Plan. Three new steel plants, each of 10 lakh ingot tonnes capacity, were set-up in the public sector and the capacity of the two existing steel works in the private sector was doubled. Foundations were laid of heavy electrical and heavy machine tool industries and heavy machine building and other branches of heavy engineering industries. The production of machinery for Cement and Paper Industries was started for the first time. In chemical industries, the advance was on a wide-front, leading not only to large units and greatly increased output of basic chemicals such as Nitrogenous Fertilisers, Caustic Soda, Soda Ash and Sulphuric Acid but also in the manufacture of a number of new products like Urea, Ammonium Phosphate, Penicillin, Synthetic Fibres, Industrial Explosives, Polythylene and Dye Stuffs. The output of many other industries like bicycles, sewing machines, telephone and electrical goods increased substantially. New skills were learnt by the workers and a large and growing class of industrial managers came into being. Organised industrial production practically doubled in these ten years; the index of Industrial Production rose from 100 in 1950-51 to 194 in 1960-61. New industrial townships and factories sprang-up in the environs of the main cities of the country.

PROGRESS DURING THE THIRD PLAN AND ANNUAL PLANS

Industiral progress was markely uneven during the eight years which comprised the Third Plan and the subsequent Annual Plans. In the first four years, conditions were relatively favourable for industrial investment and growth and the progress achieved was significant. Thereafter for nearly three years, the economy was subjected to considerable stress and strain and growth rate in industrial production declined firstly slowly and then steeply till it reached virtual stagnation. But in the last year of this period, i.e. 1968-69, there were distinct signs of recovery.

Decline after 1964-65 was attributable to several factors of which the most important were series of dislocations caused by hostilities in 1965 and two successive droughts in 1965-66 and 1966-67. Many industries were severely affected by shortage of raw materials and components arising from pause in external aid in 1965.

Among industries in which Third Plan production targets were fully or nearly realised by 1965-66 were aluminium, automobiles, electric transformers, cotton textile machinery, machine tools, sugar, jute, textiles, power-driven pumps, diesel engines and petroleum products. On the other hand, in some important industries like steel and fertilisers, there was a considerable shortfall in production. In subsequent years, there was a step-up in production in certain industries such as fertilisers, heavy chemicals, cement and petroleum products. Inspite of this uneven performance, significant achievements contributing towards realisation of diversified industrial structure were made during this period. Substantial capacity was created in many new lines. Several large projects launched at the commencement of Third Plan were completed and brought into production in particular, in heavy engineering and different units in Heavy Engineering Corporation. Mining and Allied Machinery Corporation and of heavy electrical projects which made it possible largely through indigenous efforts expansion of further capacity in vital sectors like iron and steel, mining and power generation. In rail and road transport and communications, virtual self-sufficiency for supply of equipment and rolling stock was achieved. Machinery manufacturing capacity for a variety of traditional industries like textiles, sugar and cement was developed and designed and engineering capabilities were expanded. Process technology was either aquired or developed to enable planning, designing and construction of industrial projects with maximum indigenous efforts in fields like fertilisers, rayons and dissolving pulp. There was an appreciable increase in production capacity of steel and non-ferrous metals. Progress was made in expansion of capacity in petroleum fertiliser petrochemical industries.

PROGRESS DURING FOURTH PLAN

In the Fourth Plan, performance of industrial sector fell short of expectations both in terms of production and investment. Investment of industrial development in public sector was estimated to be about Rs 2,700 crore as against provision of Rs 3,050 crore. While pace of investment in some sectors like Iron Ore, Petroleum and Petro-chemicals was generally satisfactory, this was not so in respect of other sectors like iron and steel, non-ferrous metals, fertiliser and coal. Infact, shortfall in overall investment was much larger if account was taken of the escalation in project costs.

A number of factors were responsible for the unsatisfactory growth in industrial production. While in some of the critical industries like steel and fertilisers, production remained substantially below the installed capacity on account of operational problems in different units other agro-based industries like sugar and textile showed an erratic trend. The inadequate pace of investment resulted in a reduced demand for industrial machinery, adversely affecting the level of output of the capital goods industries. Production in other engineering industries was also hit by the shortage of Steel and Non-Ferrous Metals.

On the positive side, there was a substantial production increase in several industries like Alloys and Special Steels, Aluminium, automobile tyres, petroleum refinery products, electronics, machine tools, tractors and heavy electrical equipment. The prodcution in the public sector undertakings also showed an encouraging rise towards the closing years of the Fourth Plan. Apart from this, The Industrial Base was further expanded and a greater degree of sophistication and self-reliance achieved.

PROGRESS DURING THE FIFTH PLAN

The Fith Plan laid emphasis on rapid growth of core sector industries and increase in the production of export-oriented goods and articles of mass consumption. The average rate of growth of industrial sector was estimated at seven per cent per annuam in the Revised Plan. The sharp increase in the prices of foodgrains, fertilisers and oil seriously upsetted the assumptions on which the Fifth Plan had been framed. These new development also lent urgency to a time-bound programme of action in order to achieve a measure of self-reliance in food and energy. The successive Annual Plans had to be formulated on the basis of these considerations.

The Fifth Plan envisaged a total outlay of Rs 53,411 crore comprising Rs 37,250 crore for public sector and Rs 16,161 crore for private sector respectively. However, due to the emergency of an unprecedented inflationary situation as a result of steep increase in oil prices in November 1973, the Plan had to be drastically modified in 1976. The Revised Plan envisaged a Total Outlay of Rs 69,351 crore comprising Rs 42,303 for public sector and Rs 27,408 crore for the private sector respectively. The public sector Outlay included Rs 3,000 crore as investment on inventories; the remaining public sector outlay of Rs 39,303 crore as current outlay.

Of the revised public sector outlay of Rs 39,303 crore during the Fifth Plan, the share of industries and minerals sector amounted to Rs 10,201 crore of the total outlay. The Outlay for large and medium industries was Rs 9,691 crore and that of village and small industries Rs 510 crore.

PROGRESS DURING THE SIXTH PLAN

The Sixth Plan envisaged a total public sector Plan Outlay of Rs 97,500 crore. The overall outlay earmarked for large industries and minerals sector is Rs 20,407 crore including for coal and petroleum. A major part of the outlay amounting to Rs 19,018 crore is in the Central Sector and the balance of Rs 1,389 crore is for the State Sector. Besides this, private sector investment during 1980-85 is estimated at Rs 30,323. The outlay for village and small industries is Rs 1,780 crore.

The Industrial Policy during the Sixth Plan aimed at optimum utilisation of existing capacities, quantitative increase in output of consumer, intermediate, capital goods and improvement of productivity. It aims at an annual growth rate of eight per cent of industrial production during the five-year period. As per the Index of Industrial Production, the average growth rate achieved during the Sixth Plan was 5.5 per cent per annum compound. The growth during the years was rather uneven—four per cent in 1980-81, 8.6 per cent in 1981-82,3.9 per cent in 1982-83,5.3 per cent in 1983-84 and 5.8 per cent in 1984-85. It may however be mentioned that the above growth rates as indicated by the Index of Industrial Production are generally of a lower order as compared to the actual growth in the overall manufacturing sector. The Index (base 1970=100) has serious limitations in terms of inadequate coverage of newly emerging growth areas like electronics, petrochemicals, etc., which were virtually non-existent in 1970. The Index also does not reflect the high-level of growth in the small-scale sector. A revised Index of Industrial Production (base 1980-81=100) is likely to be ready soon. A review of performance of industries in the Sixth Plan reveals that targets of capacity creation have been achieved for industries like Aluminium, Zinc, Lead, Thermoplastics, Petro-chemical Intermediates, electrical equipment automobiles and consumer durables. Production targets were achieved in industries like Petroleum, machine tools, passenger cars, motor cycles and scooters, TV receivers, etc. However, shortfall in production was reported for Coal, Steel, Non-ferrous Metals, drugs and pharmaceuticals, textiles, Jute Manufacture, commercial vehicles, railway wagons, Sugar, etc.

Some of the major technology achievements of the Sixth Plan are commissioning of 500 mw power generation unit, commencement of manufacture of 500 mw turbo generator and boiler and manufacture of fuel-efficient 800 cc passenger cars of contemporary technology of International Level. In the fertiliser sector, manufacture of 1,350 tonnes per day fertiliser plant has commenced. In the steel sector, fully indigenous 3,200 cubic metre blast furnace and seven meter tall coke oven battery and equipment are now manufactured in the country. Similarly, large-sized heavy machinery for mining are now being manufactured, e.g., long-wall mining equipment, eight cubic metre hydraulic excavaters, etc.

In electronic industry, which has been identified as a *sunrise industry* in the Seventh Plan, higher production level than targetted has been achieved in the Sixth Plan. Higher levels of technology have been achieved in fields like LSI/VLSI circuits, manufacture of eight and 16 bit micro-computer chips, computers and micro processors, communication equipments, broadcasting and TV transmission equipments, micro electronics, electronic materials and components, etc.

During the Seventh Five-Year Plan, the overall performance on industrial sector has been quite satisfactory attaining an average growth of 8.5 per cent per annum as against the target of 8.7 per cent. Year-wise achievements were 8.7 per cent in 1985-86, 9.1 per cent in 1986-87, 7.3 per cent in 1987-88, 8.8 per cent in 1988-89 and 8.4 per cent in 1989-90. Considering the several handicaps like severe droughts in 1987-88 and the consequent deceleration in demand for consumer goods as well as inadequate availability of foreign exchange for import of key inputs, growth rate during the Seventh Five-Year Plan has been a matter of considerable satisfaction especially when compared to the growth in the earlier Plan Periods. The liberalisation of industrial policy and procedures which was initiated in the Sixth Five-Year Plan and was continued during the Seventh Five-Year Plan had successed in creating proper environment for sustained industrial growth by providing to industry the degree of flexibility essential for smooth adjustment of changing demand and supply situation.

As regards the broad sectoral performance during the seventh Plan, the growth in mining and quarrying sector has been 5.7 per cent in electricity generation, it has been 9.4 per cent in manufacturing it has and been 10.5 per cent as against the respective Seventh Plan Target of 13 per cent, 12 per cent, and 8 per cent.

TABLE 14.1 PROGRESS OF THE SIXTH PLAN OUTLAYS/EXPENDITURE— CENTE STATES AND UNION TERRITORIES

(Rs. crore)

Heads of Development	Sixth Plan Outlay 1980-85	Annual Plan 1980-81 (Actuals)	Annual Plan 1981-82 (Actuals)	Annual Plan 1982-83 (Actuals)	Annual Plan 1983-84 (Acutals)	Annual Plan 1984-85 (Actuals)	Total Sixth Plan (Actuals)
1. Agriculture	5,695.1	981.5	1,129.4	1,261.0	1,427.0	1,824.6	6,623.5
2. Rural Development	5,363.7	1,040.2	1,100.9	1,295.8	1,497.9	2,062.0	6,996.8
3. Special Area Programme	1,480.0	206.4	258.5	335.1	356.8	423.5	1,580.3
4. Irigation and Flood Control	12,160.0	1,777.3	1,948.4	2,105.2	2,445.4	2,653.6	10,929.9
5. Energy	26,535.4	3,828.0	5,064.9	6,409.6	7,276.6	8,172.2	30,751.3
(a) Power	19,265.4	2,656.8	3,182.3	3,708.56	4,095.5	4,658.5	18,298.6
(b) New and Renewable Sources of Energy	100.0	4.3	13.9	22.5	33.7	88.7	163.1
(c) Petroleum	4,300.0	735.2	1,204.8	1,823.1	2,197.8	2,521.2	8,482.1
(d) Coal	2,870.0	431.7	663.9	855.5	952.6	903.8	3,807.5
(e) Energy Development	—	—	—	—	—	—	—
6. Industry and Minerals	15,017.6	2,194.5	2,777.9	3,075.3	3,916.4	4,983.4[1]	19,647.5[1]
(a) Village and Small-Scale Industries	1,780.5	273.2	322.9	326.1	402.6	620.3	1,945.1
(b) Large and Medium Industries	13,237.1	1,921.3	2,360.0	2,709.2	3,478.8	4,321.1[1]	14,790.4[1]
(c) Others	—	—	95.0	40.0	35.0	42.0	212.0
7. Transport	12,412.0	2,163.0	2,583.1	2,752.8	3,075.8	3,633.7	14,208.4
(a) Railways	5,100.0	973.0	1,210.0	1,319.5	1,419.6	1,664.6	6,586.7
(b) Others	7,312.0	1,190.0	1,373.1	1,433.3	1,656.2	1,969.1	7,721.7

TABLE 14. 1 (Continued)

(Rs. crore)

Heads of Development	Sixth Plan Outlay 1980-85	Annual Plan 1980-81 (Actuals)	Annual Plan 1981-82 (Actuals)	Annual Plan 1982-83 (Actuals)	Annual Plan 1983-84 (Actuals)	Annual Plan 1984-85 (Actuals)	Total Sixth Plan (Actuals)
8. Communication and Information and Broadcasting	3,134.3	356.7	576.1	674.8	864.5	997.4	3,469.5
9. Science and Technology	865.2	97.4	148.3	208.1	228.5	338.1^1	1,020.4^1
10. Social Services	14,035.2	2,074.6	2,487.2	2,950.2	3,834.7	4,569.7	15,916.6
(a) Education	2,523.7	339.5	435.7	538.6	697.8	965.0	2,976.6
(b) Health and Family Planning	2,831.0	411.5	530.4	675.2	853.1	942.0	3,412.2
(c) Housing and Urban Development	2,488.4	477.3	488.1	507.3	656.9	709.5	2,839.1
(d) Other Social Services	6,192.1	846.3	1,033.0	1,229.1	1,626.9	1,953.4	6,688.7
11. Others	801.5	112.8	136.2	215.0	163.9	219.6	847.5
12. Total (I to II)	97,500.0	14,832.4	18,210.9	21,282.9	25,087.5	29,878.0	1,09,291.7
	—	(15,023.4)	(18,372.9)	(21,724.9)	(25,313.6)	(30,032.5)	(1,10,467.3)
(a) Central Plan	47,250.0	7,049.3	9,197.0	11,284.9	13,644.0	16,650.0	57,825.2
(b) State Plans	48,600.0	7,527.5	8,666.3	9,587.8	10,994.8	12,681.8	49,458.2
	—	(7,718.5)	(8,828.3)	(10,029.8)	(11,220.9)	(12,836.6)	(50,633.8)
(c) Union Territory Plans	1,650.0	255.6	347	410.2	448.7	546.2	2,008.3

Note: Figures in brackets are inclusive of expenditures (Rs 191 crore in 1980-81, Rs 162 crore in 1981-82, Rs 442 crore in 1982-83, Rs 226 crore in 1983-84 and Rs 154.5 crore in 1984-85) on works financed by the Central Assistance for relief against natural calamities.

1. Excludes Rs 2.85 crore on account of National Test House.

TABLE 14.2 PROGRESS OF THE SEVENTH PLAN OUTLAYS/EXPENDITURE—CENTRE, STATES AND UNION TERRITORIES

(Rs. crore)

Heads of Development	Seventh Plan Outlay 1985-90	Annual Plan 1985-86 (Actuals)	Annual Plan 1986-87 (Actuals)	Annual Plan 1987-88 (Actuals)	Annual Plan 1988-89 (Actuals)	Annual Plan 1989-90 (R.E)	Likely Total for Seventh Plan 1985-86 to 1989-90
1. Agriculture & Allied Activities	10,523.62	1,825.92	2,215.79	2,742.92	2,903.02	3,176.42	12,864.07
2. Rural Development	8,906.08	2,226.14	2,667.65	3,146.42	2,982.34	4,074.70	15,097.25
3. Special Area Programmes	2,803.59	447.33	627.60	677.05	926.51	903.18	3,581.67
4. Irrigation and Flood Control	16,978.65	2,792.24	3,221.63	3,346.94	3,590.92	3,524.45	16,476.18
5. Energy	54,821.26	9,613.21	11,402.78	11,594.48	13,226.41	16,789.10	62,625.98
(a) Power	34,273.46	5,615.53	6,701.45	7,096.29	8,243.79	10,832.41	38,489.47
(b) Petroleum	12,627.67	2,869.88	3,326.41	3,019.55	3,108.90	3,615.83	15,940.57
(c) Coal & Lignite	7,400.58	995.04	1,233.05	1,362.93	1,737.66	2,199.47	7,528.15
(d) Non-Conventional Sources of Energy	519.55	132.76	141.87	115.71	136.06	141.39	667.79
6. Industry & Minerals	22,415.55@	5,502.88@	5,619.67@	5,537.05@	5,896.04$	7,109.44	29,665.08
(a) Village & Small Industries	2,752.74	524.35	615.74	616.85	686.17	820.74	3,263.85
(b) Other Industries	19,662.81	4,978.53	5,003.93	4,920.20	5,209.87	6,288.70	26,401.23
7. Transport	22,644.86	4,072.19	5,201.43	6,034.61	6,722.96	7,552.22	29,583.41
(a) Railways	1,2334.55	1,941.68	2,697.06	3,418.87	3,929.00	4,450.00	1,6436.61
(b) Others	10,310.31	2,130.51	2,504.37	2,615.74	2,793.96	3,102.22	13,146.80
8. Communications	4,474.52	942.12	1,085.61	1,463.95	2,193.76	2,920.44	8,605.88
9. Science and Technology and Environment	2,463.06	404.78	512.38	585.42	751.42	695.45	2,949.45
10. General Economic Services	1,395.60	179.05	423.12	386.07	494.82@	795.65@	2,278.71
11. Social Services	3,1545.24	4,858.45	5,901.99	7,006.40	8,052.52	9,016.39	34,835.75
(a) Education	6,382.65	876.79	1,014.38	1,610.84	1,913.36	2,283.92	7,699.29
(b) Medical & Public Health	3,392.89	579.89	641.77	724.31	831.01	917.05	3,694.03
(c) Family Welfare	3,256.26	479.81	561.11	607.39	671.84	638.01	2,958.16
(d) Housing & Urban Development	4,229.50	761.11	920.05	907.31	1,069.30	1,182.60	4,840.37

TABLE 14. 2 (Continued)

(Rs. crore)

Heads of Development	Seventh Plan Outlay 1985-90	Annual Plan 1985-86 (Actuals)	Annual Plan 1986-87 (Actuals)	Annual Plan 1987-88 (Actuals)	Annual Plan 1988-89 (Actuals)	Annual Plan 1989-90 (R.E)	Likely Total for Seventh Plan 1985-86 to 1989-90
(e) Other Social Services	14,283.94	2,160.85	2,764.68	3,156.55	3,567.01	3,994.81	1,5643.90
12. General Services	1,027.97	195.59	269.46	399.24	329.11	459.45	1,652.85
Total (1 to 12)	1,80,000.00	33,059.90	39,149.11	42,920.55	48,069.83	57,016.89	2,22,922.07
	33,421.09	(43,970.50)	(44,034.10)	(48,644.83)	(9,57,116.89)		
(a) Central Plan	95,534.00	19,115.47	22,401.76	24,583.68	27,948.98	35,712.93	12,9762.82
(b) State Plans	80,698.00	13,249.52	16,042.98	17,627.53	19,356.35	20,444.96	86,721.34
		13,610.71	16,599.03)	18,741.08)	19931.35	20,544.96	89,427.13
(c) U.T. Plans	3,768.00	694.91	704.37	708.34	764.50	859.00	3,731.12

Note: As per revised budget classification.

: Figures in brackets are inclusive of expenditure on works financed by Central Assistance for relief against natural calamities (Rs. 361.19 crore in 1985-86, Rs. 556.05 crore in 1986-87, Rs. 1,113.55 crore in 1987-88, Rs 575.00 crore in 1988-89 and Rs. 100.00 crore in 1989-90).

: Annual Plan Outlays/Expenditure in respect of some erstwhile union territories have been included in State Plans figures consequent on their attainment of statehood. The Seventh Plan Outlays are, however, as per the then existing situation.

: Actual Plan Expenditure for 1985-86 and 1986-87 are as published in previous Annual Plan Documents.

: Outlays/Expenditure for Petro-Chemicals and Engineering Units under Ministry of Petroleum and Natural Gas has been excluded from Energy and included under industry and minerals.

: R.E.- Revised Estimates.

1. Includes provision for district planning and National Savings Schemes.
2. Provision for Speical Employment Scheme is included.

TABLE 14.2(A) MEGA, MAJOR AND MEDIUM PROJECTS WITH ANTICIPATED INVESTMENT

(As on 1 January, 1990)

	Number	Anticipated Investment (Rs crore)	Per cent of total anticipated investment
Mega Projects costing Rs 1,000 crore and above	25	43,520	48
Major Projects costing between Rs 100 crore and Rs 1,000 crore	107	36,896	41
Medium projects costing between Rs 20 crore and Rs 100 crore	199	10,417	11
TOTAL	331	90,833	100

PROGRAMME IMPLEMENTATION

The Ministry of Programme Implementation was set-up in September, 1985, to usher in a new system of goal-oriented management to closely monitor implementation of anti-poverty programmes, performance of all industrial infrastructure sectors of economy and implementation of Central Sector industrial projects costing over Rs 20 crore each. It also assists varlous other ministries/departments of the Government in preparation of Annual Action Plans and review of their performance and systems improvement. The Ministry is also involved in preparation and evaluation of memorandum of understanding between large public enterprises and the Government.

Monitoring of poverty alleviation programmes involves monitoring of programmes like: (i) programmes for raising income, creating assets and improving quality of life of the poor' (ii) welfare of scheduled castes/ scheduled tribes; (iii) minimum needs programmes such as rural water supply, house-sites and construction assistance, rural electrification, rural health, nutrition, elementary education, adult literacy and slum improvement; (iv) programmes aimed at increasing production and productivity and efficient distribution of consumer goods; (v) adoption of two-children norm, development of youth and women; (vi) conservation of environment; and (vii) making administration responsive to public needs. Table 14.3 indicates physical achievements of these programmes from 1987-88 to 1989-90, targets for 1990-91 and achievements for the period April-September, 1990-91.

Infrastructure monitoring by the Department of Programme Implementation includes both monitoring and coordination of production and growth with efficiency of infrastructure sectors viz., power, coal, steel, railways, shipping and ports, cement, communications, fertilisers and petroleum. Areas of monitoring include production, distribution and growth of core sectors including capacity utilisation, productivity and other related efficiency indicators. Physical targets (for each area in respect of each infrastructure) are examined at the beginning of the year to identify inter-sectoral mismatches in input and output requirements of each sector in achieving targets during the year. Overall growth in infrastructure performance from 1985-86 to 1989-90 as also the trend in capacity utilisation during the period, is given in tables 14.4 and 14.5 respectively.

Implementation of projects in Central Public Sector with an approved outlay of Rs 20 crore and above, is being continuously monitored by this ministry. Projects under implementation have been classified into Mega Projects (costing over Rs 1,000 crore), Major Projects (costing between Rs 100-1000 crore) and Medium Projects (costing between Rs 20-100 crore). There are, at present, *330 projects under implementation* which are being monitored by the Ministry of Programme Implementation. Of these, 134 projects cost Rs 100 crore and above, each of them. In view of large quantum of investment involved in Mega and Major Projects, these are monitored on a continuous basis every month through *monthly Flash Report/Exception Report System.* These projects, along with all medium projects, are covered in a detailed quarterly report. An extensive use of computer based data storing and retrieval is adopted for upto-date monitoring of the status of all projects. After processing the Monthly Flash Input Reports in consultation with controlling administrative ministries/ departments, an 'Exception Report' which is a self-contained single page action document presenting the background information of the project and major unresolved problems affecting its implementation, is prepared for each Mega/Major Project. The number and anticipated investment in such projects as on 1 October, 1990, is given in table 14.6.

The Action Plan of the Department of Programme Implementation for 1990-91 provides that in addition to physical progress monitoring, expenditure progress monitoring (cost control) will also be done for better control over expenditure. Action plan includes scrutiny and analysis of the completion reports on all completed projects with a view to drawing lessons for the future.

A nodal role has been assigned to the Department of Programme Implementation in regard to project implementation and in this framework, the department is currently assisting the parliamentary committee on public undertakings in their horizontal Study-On-Time and Cost Over-runs of Central Projects.

TABLE 14.3 TARGETS AND ACHIEVEMENTS

Item	Unit	Achievements			Target	Achievement (April-Sept.)
		1987-88	1988-89	1989-90	1990-91	1990-91
1	2	3	4	5	6	7
1. IRDP	(Thousand Families)	4,255	3,626.3	3,301.2	2,372.0	816.6
2. Employment generated under NREP	(Lakh Mandys)	3,707	3,776.1			
3. RLEGP	–do–	3,159	2,755.4	8,285.8[1]	9,774.7	1,831.6
4. SSI Unit	(Thousand Nos.)	171	163.9	162.0	153.6	51.8
5. Distributing of Surplus Land	(Acre)	92,198	1,34,458	1,18,122	15,600	36,797
6. Bonded Labour Rehabilitation	(Number)	19,353	13,472	9,759	3,596	1,151
7. Drinking Water Problem Solved (VLG)	(No. of Villages)	59,054	51,911	54,180	38,285	3,857
8. Community Health Centres	(Number)	212	264	177	269	0
9. Primary Health Centres	(Number)	2,168	2,749	1,489	1,356	16
10. Sub-Centres	(Number)	8,095	10,331	8,934	4,877	118
11. Immunisation of Children	(Lakh)	138	166.6	181.8	224.9	71.6
12. F.P.Sterilisation	(Thousand Nos.)	4,880	4,538.1	4,061.1	5,732.6	1,228.2
13. Eq.Sterilisation	(Thousand Nos.)	1,879	2,111.8	2,275.4	2,833.8	1,127.5
14. ICDS Blocks Opel. (cum)	(Number)	1,503	1,741	1,803	2,070	1,941
15. Anganwadies (cum)	(Thousand Nos.)	167	180.2	196.5	233.4	204.3
16. SC Familier Assisted	(Thousand Nos.)	2,516	2,327.7	2,227.0	2,305.9	513.0
17. ST Familier Assisted	(Thousand Nos.)	1,130	1,040.1	978.5	824.5	236.5
18. House-Sites Allotted	Families	919	809.1	884.2	576.0	306.6
19. Construction Assistance	Families	412	586.9	410.9	326.9	178.5
20. Indian Awaas Yejana for SC/ST	(Thousand Nos.)	162	126.3	167.3	122.1	29.2
21. EWS Houses Provided	(Thousand Nos.)	120	139.8	34.5	72.2	17.5
22. LIG Houses	(Number)	50,993	50,679	64,760	50,006	13,397
23. Slum Improvement (Population)	(Thousand Nos.)	1,755	2,061.2	2,013.2	1,539.5	614.4
24. Tree Plantation	(Lakh)	35,510	40,436.6	34,186	25,000	15,378

TABLE 14. 3 (Continued)

Item	Unit	Achievements			Target (April-Sept.)	Achievement
		1987-88	1988-89	1989-90	1990-91	1990-91
1	2	3	4	5	6	7
25. Fair Price Shops	(Number)	9,926	7,663	4,262	1,887	1,049
26. Villages Electrified	(Number)	21,327	19,234	15,892	13,572	1,541
27. Pumpeets Energised	(Thousand Nos.)	568	595.3	528.8	423.5	142.1
28. Improved Chullahs	(Thousand Nos.)	1,376	1,675.0	1,913.8	1,662.9	298.9
29. Bio-gas Plants (states)	(Thousand Nos.)	162.0	140.8	134.5	128.6	30.4
30. Irrigation Potential	(Thousand ha)	2,300	2,450	2,972	2,622	N.A.
31. Dryland Farming (cum)	(No. of Micro-Watersheds)	15,478	20,478	23,045	18,289	N.A.
32. Pulses Production	(10 Lakh ton)	11.0	13.7	13.4	15.0	N.A.
33. Oilseeds Production	(10 Lakh ton)	12.0	17.9	16.87	18.00	N.A.
34. Elementary Education	(Lakh Nos.)	49.0	53.4	45.3	52.5	N.A.
35. Adult Literacy	(Lakh Nos.)	92.0	107.9	95.0	173.0	N.A.

[1] NREP and RLEGP Programmes have been merged into Jawahar Rozgar Yojana from 1989-90.

TABLE 14.4 INFRASTRUCTURE PERFORMANCE

(Percentage)

Sector	Annual growth (compound) during Seventh Plan	1985-86	1986-87	1987-88	1988-89	1989-1990 Target	1989-90 Actual	1989-90 Actual Productrion
1. Power generation (Thermal, Hydel and Nuclear)	11.5	8.5	10.2	7.5	9.5	13.6	10.9	245.149(BU)
2. Coal production	8.9	4.6	7.5	8.4	8.2	8.9	4.5	201.02(MT)
3. Production at integrated steel plants								
(i) Hot metal	7.2	8.7	4.0	4.1	9.3	6.3	0.6	11.95(MT)
(ii) Ingot steel	6.8	9.2	0.3	7.4	10.6	7.6	–1.8	10.59(MT)
(iii) Saleable steel	7.3	11.0	5.8	4.5	7.2	5.7	–2.0	9.03(MT)
4. Railway revenue earning goods traffic	5.9	9.4	7.4	4.5	3.7	5.0	2.5	309.60(MT)
5. Cargo handled at major ports	6.6	12.0	4.0	7.6	9.4	–0.3	0.6	147.28(MT)
6. Telecommunications								
(i) Tel. instruments production	—	11.4	5.8	3.3	22.0	7.6	–27.3	689.10(1000 Nos.)
(ii) Provision of new (net) tel. Connections (monitored sector)	—	4.8	16.1	4.4	–1.8	26.4	23.4	193.95(1000 Nos.)
7. Cement production	10.2	9.7	10.4	8.0	11.8	10.6	3.0	45.64
8. Fertiliser production								
(i) Nitrogen	10.8	10.5	25.0	1.1	22.7	4.3	0.6	6.75(MT)
(ii) Phosphate	11.7	13.5	16.2	—	35.5	6.6	–20.0	1.80
9. Petroleum								
(i) Crude oil production	3.6	4.1	1.0	–8.4	5.6	7.2	6.4	34.08(MT)
(ii) Refinery throughput	6.6	20.7	6.5	4.5	2.2	4.4	6.4	51.94(MT)

TABLE 14.5 TRENDS IN CAPACITY UTILISATION

Percentage

	Area/ sector	1985-86 Actual	1986-87 Actual	1987-88 Actual	1988-89 Actual	1989-90 Target	1989-90 Actual
1.	POWER						
	(Thermal PLF)						
	Public						
	Central	61.9	65.0	63.3	62.6	57.5	62.1
	State	49.2	49.8	53.5	51.6	53.5	53.0
	Private	57.5	61.2	67.6	63.2	61.3	69.5
	All India	52.4	53.2	56.5	55.0	55.0	56.4
2.	STEEL						
	(Ingot Steel)						
	Public (SAIL)	69	55	60	68	75	67
	Private (TISCO)	97	104	105	96	96	97
	Overall	—	62	67	73	77	72
3.	FERTILISER						
	Nitrogen						
	Public	53.4	65.4	66.1	71.1	74.9	66.7
	Cooperative	83.0	93.3	100.2	110.6	96.1	107.7
	Private	95.4	99.1	86.9	98.1	99.3	96.8
	Total	70.3	79.1	77.6	85.2	85.9	82.8
	Phosphate						
	Public	59.7	71.6	65.6	86.3	81.9	53.7
	Cooperative	113.9	110.7	93.6	95.9	100.9	72.4
	Private	92.3	77.2	69.6	85.3	87.5	69.8
	Total	88.9	80.1	71.5	86.9	87.3	65.3
4.	CEMENT						
	(Major Plants)						
	Public						
	CCI	70	66	59	66	85	74
	Others	53	52	57	56	57	50
	Total	59	57	58	60	76	60
	Private	81	83	75	81	86	80
	All India	79	79	72	76	81	75

(Including Mini/white cement plants)
with reference to installed capacity

TABLE 14.6 MEGA, MAJOR AND MEDIUM PROJECTS WITH ANTICIPATED INVESTMENT

(As on 1 Oct. 1990)

	Number	Anticipated Investment (Rs crore)	Per cent of total anticipated investment
Mega Projects costing Rs 1,000 crore and above	31	53,278	55
Major Projects costing Rs 100 crore and Rs 1,000 crore	103	34,032	35
Medium Projects costing between Rs 20 crore and Rs 100 crore	196	10,132	10
Total	330	97,442	100

15 Agriculture

ECONOMIC regeneration attempted in successive Five-Year Plans has made agriculture a pride of National Economy. This sector, today, provides livelihood to about 70 per cent of the labour force, contributes nearly 35 per cent of Net National Product and accounts for a sizeable share of total value of country's exports. It supplies bulk of wage goods required by non-agricultural sector and raw material for a large section of industry.

Per capita net availability of foodgrains went up to a level of 496 grams per day in 1989 as compared to that of 395 grams in early fifties. In 1990, it has been provisionally estimated at 476 grams per day. In terms of gross fertiliser consumption, India ranks fourth in the World after USA, USSR and China. The country has the largest area in the World under Pulse Crops. In the field of cotton, India is the first one to evolve a cotton hybrid. The country has made a major breakthrough in Prawn Seed Production and Pest Culture Technology.

Compound growth rate in agricultural production during the period 1949-50 to 1988-89 is 2.63 per cent per annum. Production of foodgrains increased significantly from 549.2 lakh tonnes in 1949-50 to 1706.3 lakh tonnes in 1989-90. Cropping pattern is more diversified and cultivation of commercial crops has received new impetus in line with domestic demands and export requirements.

During Post-Green Revolution period i.e., 1967-68 to 1988-89, growth rate in agricultural production was assessed at around 2.64 per cent per annum. Production of foodgrains during this period increased from 950.5 lakh tonnes to 1699.2 lakh tonnes. Cropping pattern has undergone perceptible changes and non-traditional crops like Summer Moong, Soya-bean, Summer Groundnut, Sunflower, etc., are gradually gaining importance. In order to utilise scarce resources optimally, a short duration third crop is also being raised in some areas utilising residual moisture available from Post-Kharif and Post-Rabi Cultivation.

The index of agricultural production, which registered an increase of 21.0 per cent in 1988-89 over the previous year showed further increase of 1.6 per cent in 1989-90 due to primarily increase recorded in the production of Cotton, Jute and Mesta, Sugarcane and other Commercial Crops. The index of foodgrains during 1989-90, however, registered a marginal increase of 0.4 per cent over the previous years level of 182.5. It is anticipated that the foodgrains production during 1990-91 would reach an another record level, the third year in succession. Production of all Iukseed Crios except Groundnut, Cotton, Sugarcane, Jute and Mesta are also bright.

TABLE 15.1 SOME KEY INDICATORS OF AGRICULTURAL PROGRESS

	Item/Unit	1950-51	1960-61	1970-71	1980-81	1985-86	1986-87	1987-88	1988-89	1989-90 Recised Final
1.	FOODGRAINS PRODUCTION (lakh tonne)									
(i)	Rice	206	346	422	536	638	606	568	705	741
(ii)	Wheat	65	110	238	363	471	443	461	541	496
(iii)	Other Cereals	154	237	306	291	262	268	264	315	343
(iv)	Total Cereals	425	693	966	1,190	1,371	1,317	1,294	1,561	1,580
(v)	Total Pulses	84	127	118	106	134	117	110	138	126
(vi)	Total foodgrains	509	820	1,084	1,296	1,504	1,434	1,404	1,699	1,706

Availability of Edible Oils including Vanaspati has also increased significantly and its production in 1987 was 9, 47,153 metric tonnes. The country has been able to sustain and improve availability of basic consumption articles and has, thus, raised the standard of living. Some key indicators of agricultural progress are shown in table 15.1

HARVESTING SEASON

There are three main crop seasons, namely; Kharif, Rabi and Summer. Major Kharif Crops are Rice, *Jawar*, *Bajra*, Maize, Cotton, Sugarcane, Sesamum, Soyabean and Groundnut. Major Rabi Crops are Wheat, Jowar, Barely, Gram, Linseed, Rapeseed and Mustard. Rice, Maize and Groundnut are grown in summer season also.

LAND UTILISATION

Land utilisation statistics are available for 92.7 per cent of total geographical area of 3287.3 lakh hectares. According to land use statistics available from states, area under forests had increased from 404.8 lakh hectare in 1950-51 to 667.3 lakh hectare in 1986-87. New sown area increased from 1187.5 lakh to 1401.5 lakh hectares during the same period. Broad cropping pattern indicates that though foodgrains have a preponderance in gross cropped area as compared to non-foodgrains, their relative share came down from 76.7 per cent during 1950-51 to 72.3 per cent during 1986-87.

SEEDS

Seed is the basic agricultural input and it has always been critical to higher agricultural production. Over a span of four decades since Independence, India has transformed itself from a subsistence economy and food importing country to one which is self-sufficient in foodgrains. Recognising seed as the primary input for increasing agricultural production, the Central Government established the National Seeds Corporation (NSC) in 1963 and the State Farms Corporation of India (SFCI) in 1969 to encourage the production and distribution of certified seeds of various crops. Thirteen State Seed Corporations have also been established to supply improved seeds to farmers.

QUALITY CONTROL

The Seeds Act was passed by Parliament in 1966 to ensure that farmers get good quality seeds. The quality control provisions are mainly applied through the certification and testing system followed in the country. There is a Central Seed Testing Laboratory and 90 State Seed Testing Laboratories functioning in various states/union territories. There are also 19 seed certification agencies. In 1972, the Seeds Act, 1966, was amended to constitute a Central Seed Certification Board. New varieties of seeds are notified by the Central Seed Committee. About 1775 new varieties have been notified so far. This has been possible due to the collective efforts of research scientists, seed technologists, progressive farmers and administrators involved in agricultural development.

The Government has decided to denotify old and obsolete varieties of seeds, to discourage the cultivation of some varieties which have become highly susceptible to diseases and pests. It has also been decided to introduce time bound notification of varieties, in future and notify them for 15 years at a time, if it is still found popular.

BREEDER SEEDS

Production of Breeder Seed is organised by the Indian Council of Agricultural Research (ICAR) through the concerned breeders and scientists on receipt of indents from the state governments. The National Seeds Corporation (NSC) and State Farms Corporation of India (SFCI) also produce Breeder Seed. The availability of Breeder Seed in the country which was 29,028 quintals in 1984–85 is estimated at about 28, 120 quintals in 1990–91. The decline in production is due to the fact that from 1990–91, the allocation of Breeder Seed has been rationalised taking into account the actual area under the crop, the seed rate, seed multiplication ratio, the past performance of different states and also the efficiency of conversion of 'breeder seed' into foundation and certified seeds as well as better matching of the seed requirements with the seed produced.

FOUNDATION SEEDS

Foundation seed is the secondary stage of the seed production cycle. National Seeds Corporation (NSC), State Farmers Corporation of India SFCI and the State Seed Corporations (SSCs) have been assigned the responsibility for the production of Foundation Seed. To ensure adequate availability of Foundation Seed, the Government of India is now allocating the Breeder Seeds to the private seed producers also through the state governments for the rapid multiplication of Breeder Seeds into foundation seeds. The Foundation Seed Production of Cereals, Pulses, Oilseeds Fibre Crops, Fodder, Potato, etc. during 1990-91 is likely to be of the order of 6.93 lakh quintals as against the estimated production of 5.54 lakh quintals during 1989-90.

CERTIFIED SEEDS

Certified Seed is the final stage of seed for raising commercial crops. The certified/quality seed distribution is also showing a rising trend. This is evident by the fact that it has increased from 14 lakh quintals in 1979-80 to 57.04 lakh quintals during 1989-90. The table 15.2 below indicates the certified/quality seed distribution from 1986-87 to 1989-90 and the target for 1990-91.

TABLE 15.2 DISTRIBUTION OF CERTIFIED/QUALITY SEEDS

(Lakh quintals)

Crop	1986-87	1987-88	1988-89	1989-90 (Anticipated)	1990-91 (Target)
Cereals	35.27	35.44	33.43	34.65	36.00
Pulses	3.39	3.46	3.37	3.75	4.00
Oilseeds	6.29	6.54	10.73	9.52	10.00
Potato	9.06	9.16	7.57	7.35	8.00
Fibres	1.72	1.54	1.44	1.74	2.00
Others	0.10	0.16	0.26	0.03	—
TOTAL:	55.83	56.30	56.80	57.04	60.00

TRANSPORT SUBSIDY ON SEEDS

This Transport subsidy on Seeds Scheme was introduced in 1986–87. The main purpose of this scheme is to subsidise the difference in the cost of transportation of seeds by rail and road to the North-Eastern States including Assam. This scheme had a total financial outlay of Rs 105 lakh during the Seventh Five-Year Plan. At the end of March, 1990, an expenditure of Rs 106.44 lakh had been incurred under the scheme. For 1990–91, there is a budget provision of Rs 45 lakh.

NATIONAL SEEDS PROJECT-III

In continuation of the National Seeds Project-I and II, the National Seeds Project (Phase-III) has been launched at a total cost of Rs 236.01 crore with the World Bank Assistance of US $1500 lakh in March, 1990. The objectives of the project are: (a) to assist the farmers by ensuring timely and adequate availability of certified/quality seeds of suitable varieties at reasonable prices; (b) to improve the working efficiency of the National and State Level Public Sector Corporations to make them economically viable; and (c) to provide facilities for the growth of private sector through adequate institutional finance.

The project has been launched throughout India through the Department of Agriculture and Cooperation, Government of India, ICAR; State Department of Agriculture of the 11 participating states and NABARD. *Under the project, the variety development programme under the ICAR and the 'Seed Certification Systems' of the state governments are being strengthened.*

NEW POLICY ON SEED DEVELOPMENT

In order to boost agricultural productivity, a new policy on 'Seed Development' has been formulated which came into effect from October,